۲۰۱.

LIBRARY OF THE UNIVERSITY OF PENNSYLVANIA

[redacted]

GIFT OF

Dr. Hobart A. Hare

ms. Coll 225
Item 9
v.1

Rush, Benjamin
VOL. I Practice of physic.

# Nov.r 1796

# Lectures 1st 2d 3d & 4th

There are three ways of acquiring medical knowledge, Reading Books, hearing Lectures & observing diseases as they occur. Practical Books should not be read by Students before they have an opportunity of observing practice. The best me-thod is to read as cases occur. Ears are sometimes more reten-tive than eyes - Dr. Franklin could never recollect his old acquaintances untill they spoke. - In attending Lectures in the first place be punctual in attendance, secondly do not copy your notes during the lectures as your time may be better employed. thirdly do not attend many courses in one season, as they will confuse you when you retire from the lecture converse on it you cannot call it your own till you have communicated it. Pay great atten-tion to nature - more attention is necessary in the United States of America as our diseases differ much from those of Europe

380558

The

# The Pulse

The pulse is the Nosometer of the System. It shall be considered i
its three different stages. 1 Natural state 2 Morbid state. 111 Deviati
from Health and Order. Natural state of the pulse. In adults the
natural state of the pulse is from sixty to eighty in a minute. 66 be
ing the medium. beating at equal intervals, soft, open, moderate
ly full- and free from all sense of resistance. The pulse is greatly
influenced by age, sex. climate. Disease Medicine. the Passions. Pos
ture of the body. State of society - Menstruation. Pregnancy & birth
Pulse beats at birth from 130. to 140 - One year old 108 to 120. Two
years 90. to 109 - Three years 80. to 108 - Four years 80. to 102 At 12 years
of age the same as in adult life. At forty five from 50 to 70 - In
old age the pulse is slow & Intermitting - A regular pulse in old age
is a sign of disease. In cold climates the pulse slower than in warm
being only 40 in Greenland. More frequent in Summer than in
winter. The passions exert considerable influence on the pulse
Anger raises it to sometimes to 140. while grief and fear reduce
it in frequency & force - Posture. More frequent in the erect

Europe. Pulse &c better learnt from nature than books - By frequent visits you will learn the combination of diseases Physicians by recieving it from their patients often get it exag=gerated. by frequent visits you cannot be decieved. Diseases much more instructing than books: as well might a man attempt to swim by reading, as practice medicine from books. Visit twice a day at least in acute diseases. Attend at the same hours each day. Never if possible disappoint a patient. Punctuality is the surest guide to eminence in any profession but particularly in ours. Prince Ferdinard, while beseiging a Citadel in Germany informed the Marquis de Granbe who was to attack another wing of the enemy the time to commence, at the instant the prince was looking at his watch when the Marquis fired the first gun. If then actions which lead to death produce so much punctuality how much more should be observed in those which lead to life No talents can ensure success without it. Do not visit your patients very early nor late nor at the time of dining. Send your medicines as soon as prescribed. Let your directions be written

than horizontal posture. Slower in sleep than in the waking state
It also varies with the hour of the day. being slowest in the morning
Increases as the day advances. becomes stationary at noon.
In civilized life more frequent than in the savage state. During
Menstruation and Pregnancy likewise accelerated — In fat persons
it is slow and perceived with difficulty. In women the pulse is quicker
and weaker than in men. Quicker immediately after coughing &
before. In many persons the pulse is, in health, either preternaturally
frequent or slow. There is also a difference in the pulse of tall
and short men being more frequent in the latter — Morbid
States of the Pulse — The Heart is composed, as well as the ~~Blood~~ Ar-
teries of muscular fibres. They sympathise more with internal
than with external diseases. Deviations of the pulse from order in
Health. In some persons in health the pulse is 160. 180. 200. and
even 220. and in others only thirty — When compression on the
brain exists as in Apoplexy, it has been reduced to 9 even to 7
strokes in a minute —

written in a legible hand. Students should not think hard of serving some time as apothecaries to their teachers. Tis as neces-sary for a student to be an Apothecary as for a General to be a Soldier. I would not trust a physician who was not so much an apothecary as to know the composition of the medicines he prescribed. The Professors in this University will be more strict in their examinations for the future on this point. Our Druggists grow rich in the neighbourhood by starving Physicians. Attend more to common than uncommon cases - do not suppose the success to your medicines before you are sure your patients have taken them - A Lady and her Vomit. sit up with sick persons frequently. the King of Prussia used to order his atten-dants to rouse him up at all times in the night that he might be accustomed to it surely then we the preservers of health should not be behind. There is more to be learned by sitting up with a patient one night than in twenty ordinary visits - in some cases it is necessary to examine the pulse every hour in the night - Never leave your patients before they are perfectly cured.

many

many during the prevalence of the yellow Fever fell victims to the negligence of their physicians while convalescent. No pa=triotism, pleasure or any duties whatever should detain you from visiting your patients; you are bound by solemn contract to at=tend faithfully to your patient from the moment you first visit him. Let your conversation always inspire hope. If ever I could be so far led from my senses as to believe any good effects from animal magnetism it would be by exciting this salubrious passion. I once heard of an Apothecary who having taken a stu=dent & taught him all the branches of his profession, told his father he had one thing more to teach him but must have £500 as a fee which being agreed on he took him into a room and in a few words told him the great secret "conceit will kill & conceit will cure". Pay great attention & delicacy in your practice among the female sex. I never knew a physician become eminent in his profession who could sport with the diseases of his female patients. There are two ways of practi=sing public and private - in private practice you will meet with

with a greater variety of cases; in public or in Hospitals there are more difficult cases & we have a more direct command of our patients - You should attend both. The great utility of Clinical Lectures - Vienna celebrated as a school of medicine, more on account of the clinical practice

## Form in Visiting Patients.

1st Private patients, let their situation in life be as it may treat with respect. Treat servants with the same politeness as their masters.

2d In entering the house of your patient always uncover your head and keep it so.

3d If you be conducted by a Lady to your patient up stairs remember always to go before her; but come down hindmost.

4th Always let your patient know by some sign of your arrival as it prevents much uneasiness. Dr Cadwallader used to make a loud hem! as he entered the room.

5th If there be two physicians the Younger should enter first.

6th

6th In Consultations the consulted physician should never visit the patient without the consulting one, he ought by no means to perscribe

7th When you go into a sick room, do not proceed immediately to feel the pulse the reasons must be obvious.

8th Never wait till a chair be handed you always make it a rule to sit down on the bedside of your patient. Trunk &c.

9th. Never enter a sick room if your great coat be wet without first taking it off. Fothergill used always to pull off his great coat as if determined for business. Patients are generally extremely attentive to their physicians. Too much attention cannot be paid to these little formulo. I once knew a young physician lose the practice of a respectable family in this City merely from feeling the pulse of one with his gloves on.

10th Do not converse on any topic untill you have examined your patient, never begin by telling him news. Let your patient ask for news, if he does it is a good sign.

Endeavour to get the history of the disease from the patient himself

himself & do not interrupt him untill he has finished as he will always give the best symptoms though he gives the worst causes. Begin to interrogate your patient by how long he has been sick, when attacked how or where, what are the probable causes sometimes erroneous sometimes true. Former habits and dress, likewise the diet &c for a week before especially in acute diseases. Whether ever hurt severely, as hurts lie a long while without effect. Whether he ever had the disease before, or any similar; as one disease frequently produces similar ones, Whether ever he had strains or wounds in the body - Whether he has ever taken medicine for it. In Chronic diseases enquire their complaints far back, enquire the age of your patient particularly if female, as certain periods of the Catamenia have influence on many diseases. Enquire their Native County, some are affected with diseases peculiar to their native land some years after having left it. Southern will not bear such copious bleeding as middle states - U: S: of America more than natives of Europe. Pay attention to the Phraseology of your

patients

patients for the same Ideas are frequentlty expressed by different words & vice versa. Viz a pain in the procordia is called by an Englishman a pain in his stomach. A Scotchman in his breast and an Irishman in his Heart. Enquire the diseases of your patients Ancestors the age to which they lived, & the remedies which relieved; it is of consequence because there is an hereditary Idiosyncrasy in some families Patients often conceal the causes of their diseases therefore it is necessary to interrogate particularly in diseases where you suspect intemperance being the cause. I would advise you to eat with your patients. The King of Prussia was an enormous eater, but denied he ate more than kept soul and body together. Embarassed circumstances bring on diseases of the mind. Enquire the temper Enquire into the habits of drinking &c. to patients who have been accustomed to the use of wine it should be given more liberally in sickness

2d In female diseases never lose sight of the diseases of the Uterus, nor in infants of worms and teething. Enquire into predispo-

predisposing causes. In Arterial diseases enquire 1st the seat of pain 2d state of the appetite, Thirst, sleep & mind - Examine the Decubitus best when most natural - Examine the eyes, the pupil particularly it teaches much of the brain Examine the teeth, Respiration, the skin whether moist, the Voice - hoarse cough a bad symptom in diseases of the bowels - Examine the countenance. The Yellow Fever had marks in the Countenance peculiar to itself Yellow tongue indicates bilious, white inflamatory diseases. A black tongue denotes a Typhus. Be cautious to enquire whether the tongue be coloured by Port Wine, Tobacco, Liquorice, Jelly &c. A blackness of the Nails indicates death, red nails favourable. Particular parts tinged in Yellow fever — Instance of a bald place alone tinged in a mans head. Attend to the pulse.

## Additional Notes to Lect.s 1. 2. 3 & 4

In Consultations let the consulted Physician examine the patient first, let the consulting physician answer all questions asked by the patient concerning the complaint; else it will give

give the family a bad opinion of their physician - Enquire into the Diet & Drink for a week or ten days preceding the attack also the predisposing debility. The Gout at 40 is often the effect of intemperance at 20 years of age. Periodical pains in the head are often caused by previous hurts on the head. Rheumatism is sometimes the effect of a translation of the piles. Gastrodynia after eating often caused by a too free use of mustard Vinegar &c. In Artificial diseases enquire into the state of the alimentary canal, excretions &c. Some diseases known by the countenance, as in Hydrocephalus which is attended with a frown of the eyes, a red eye dangerous, a yellow one less so - a white eye favourable. When the pupil is large it indicates an affection of the brain. The Tongue - its appearance sometimes deceitful, as being natural just before death.

## Lecture 5th. Of the Pulse.-

Pulse indicates much in febrile diseases. In Acute diseases it is to be depended on - 19 out of 20 are of this class. It is to the

the body what a dial plate is to the watch. My system fixes its chief attention on it. Natural pulse from 60 to 80 = at birth from 130 to 180 strokes in a minute - 1st year from 108 to 120 - 2d from 90 to 100 - 3d from 80 to 108 - 4th 82. After 12 from 60 to 80 is a natural pulse. Pulse when regular in old age is a sign of disease. Natural pulse in old men is slow and intermitting - Quicker in women than men : Situation influ=ences the pulse. It should be felt with the fingers in prefer=ence to the thumb. All four should be used. The fingers of the right hand should be used in feeling the pulse of the left & vice versa throw all the fingers on it. let the arm be free from pressure of every kind. Muscular action influences it, let it be in a relaxed easy position - When blisters are applied to the wrist always leave room to feel the pulse. Positions of the body whether in sitting lying either on the back or the side &c and standing influences the pulse with respect to force frequency or fullness on the back it is slowest, on the side quicker, quicker sitting up & quickest walking - proximity to the fire in=

=fluences

influences it. Different positions of the arm affect the pulse
All these directions should be carefully attended to where a
nice discrimination with respect to bleeding is necessary. Pas-
-sions of the mind influence the pulse. A Physician once feel-
-ing the pulse of a patient concieved bleeding absolutely neces-
-sary & informed the patient of it, who was so affected by it as
to occasion such an alteration in the pulse, that on feeling it
again he deferred bloodletting: therefore always make up
your mind with respect to the remedy before you inform your
patient any thing about it. Dr Shippen directed bloodletting
to a pregnant Lady who was so affected by it that she was short-
-ly after delivered of a dead child. Conversation influences the
pulse therefore always feel the pulse of your patient before you
interogate him about his complaint. The position of the Phy-
-sician also influences the pulse. In cases where there is a dif-
-ficulty in determining with respect to bleeding you should al-
-ways shut your eyes, command silence & darkness which
suspends all sensation & concentrates all the whole sensorial
system

system in the fingers Never take hold of the pulse immedi=
=ately warm your fingers first. The pulse should always be
felt in both arms in Palsy. I have known the pulse in the
wrist of the affected side to beat only 50 strokes & the other 90
in a minute. Dr. Zimmerman also mentions several cases of
the like kind. The artery sometimes runs on the radius parellel
with the thumb. Never decide upon a pulse until you have felt
it beat 20 strokes. I have usually observed a pause every 18th stroke
The Chinese who are reckoned the best distinguishers of the pulse ne=
=ver feel less than 50 strokes. We should always make allowance for
the effects of cold upon the pulse, as it influences it both in frequency
and force. In examining the pulse of your patient always enquire
whether his arm has been uncovered; as the application of cold
must always make it slower. The seasons & even times of the
same day affect the pulse- slower in winter than summer Quicker
in the evening than morning; slow at night, owing to the exhausted
state of the system- Situation in life influences the pulse; slower
on account of Stimuli. It is a fact that the pulse of an Indian
is

is much slower than that of a civilized citizen inhabitants of the country have pulses slower than an inhabitant of a town or city. It is most easily quickened in infancy by stim=ulants. When the pulse is 15 or 20 strokes in a minute below the natural standard in Children it denotes an affection of the brain. I knew a Gentleman in this city whose pulse never discovered any alteration in frequency or force until a few hours before he died. The pulse is slow in proportion to the size of the per=son owing to the largeness of the heart. The slow pulse in old people is owing to unequal excitement. The reason why the pulse of an Indian is slower than the pulse of a citizen is owing to their passions being more torpid. There is an Idiosyncrasy in the pulse not to be accounted for. I know a lady whose pulse no fever has raised above 70 and a Gentleman whose pulse is always 100 strokes in a minute in perfect health. For computing the vel=-ocity of the pulse, Leeches & pulse glasses have been used - the lat=-ter patients concieve as death warrants - I disapprove of both - A person can only attend to the velocity of the pulse; but there

are

are other things to be considered – tension, fulness and slowness, are more important. Pulse feelers my former pupil Dr Coxe informs me are used by many Physicians in G. Britain. I hope they never will be used in America

Febrile Pulse. It is different from that which occurs in exercise; is attended with a jerk or convulsive action of the arterial system; is divided into quick and frequent. The quick pulse is the rapidity with which a single pulsation is formed; a frequent the number of pulsations in a given time; the former occurs in inflamatory fevers. the latter in Hectic. Intermitting pulse occurs in malignant fevers. A full tense & hard pulse I shall call a synocha pulse. Weak, quick, small unequal and tense without hardness a Synochula; full quick and frequent without hardness, a Synochus pulse. Synochoid a grade below synochula. Typhus quick and weak occurs in nervous malignant fevers. Typhoid a grade below synochoid. Hectic pulse full frequent and hard nearer related to Typhoid than any other. There is the depressed or locked pulse. It occurs

occurs in the Yellow Fever in Plague Small Pox &c.
is known by imparting a tension to the fingers, by occurring
in the first stages of acute diseases; & suddenly or in paroxy-
-sms of Fevers; & by rising by depletion. Dr Physicks of this
City was called last winter to Dr Deweese of this City whom
he found without a pulse, he immediately ventured on bleeding
& opened a vein, shortly after the blood began to flow he was
seized with convulsions & there was every appearance of his
expiring under the operation. Yet the Dr did not despair he
took 90 Oz of blood from him before he tied up his arm &
his patient recovered in a few days.— The pulse is sometimes
scarcely susceptible it occurs in apoplexy Malignant Fevers
& Hydrocephalus Internus. It is as slow sometimes as from
9 to 12 Strokes in a minute; but I have lately been informed
by a Medical Correspondent in Dublin that a case of Apo-
-plexy occurred in which the pulse did not beat more than
7 Strokes in a minute. There is no case of a preternaturally
slow pulse, but what is owing to debility of the indirect kind,

and

and in no case does it occur where bleeding is not necessary. The intermitting pulse - it is always dangerous - attends the plague &c arises from a spasm of the heart or compression of the brain - sometimes from affections of the liver. The chorded or catgut pulse sensible to the fingers like anger to the mind. Throbbing pulse - in Palsy full and bounding; in Hypochondri= =asis weak and low - The Aneurismatic pulse. full, tense jarring and bounding - There is also the Iron and Wooden pulse. All these states of the pulse depend on the strength of the heart & arteries. In Hysteria the pulse varies 100 times in an hour - sometimes absent 24 hours. The states above mentioned fre= =quently run into each other, they change frequently in fever; hence the necessity of frequent visits. In fevers the pulse is the disease itself. All General diseases can be distinguished by it. The Ancients thought nothing of the pulse. Dr Brown among the moderns treated it with contempt; but its intimate connec= =tion with all parts of the body certainly points out its utility in diseases. Feel different arteries in different diseases. Feel the

temporal

temporal artery especially in diseases of the brain. The pulse will be strong in one and weak in the other & vice versa. Attend to the pulse before giving medicines of a stimulating quality. Prog=nosis from the pulse simple and easy. When it beats at 180 you may expect death near at hand. The pulse sometimes regular near death and sometimes uncommonly full. I have one thing more to mention; always give the disease a name before you leave your patient, otherwise he will not be satisfied; The more technical the better the term. In the commencement of the Yel=low Fever I among others called it by that name; but our pa=tients would have been better satisfied, had we called it Typhoi=des Ictyoides. In the second visit fewer questions should be ask=ed than in the first - such as the effect of the medicine pre=scribed; how the patient slept; what appetite &c &c. ——

Times of the day influence the pulse. It is slowest in the morning less so at noon & least at night. This increase & frequency is cau=sed by an exhaustion of excitability. The pulse is slower in the sleeping than waking state; for this reason. Light, Thought, Motion &c

ſe act in the latter. I know an old lady in this City whose pulse was absent 36 hours. from eating 5 or 6 hard roasted oysters.—

## Lecture 6th Novr 15th

Physiology. In Contemplating the human body I can-not commence, without paying homage to the Deity. In entering upon it I feel as a devout man ought to do in entering the tem-ple of his God. At the word of the Almighty all things were created instantly; but Man was the effect of a divine consultation in heaven. Breath is the first pulse of life. Discoveries in physi-ology will not end perhaps with time. The method I shall pur-sue in the following course I have borrowed from no one author Dr Cullen's Gregory's Duncans &c &c management is altogether artificial

### Animal Life.

See my publication on this Subject.

Lecture

# Lecture 10th Nov.r 21st

## Animal Heat. Motion and Sensation constitute Life.

I shall proceed 1st to consider the causes of animal heat. There are a variety of theories, all of which I deliver before I give my own. 1st Dr Stevens's opinion is that animal heat is produced by a fermentation which takes place in the blood of the putrifactive kind. This I object to 1st because there is no such thing as putri=
=faction in the fluids of a living body 2d It is incompatible with life, see Dr Sybert's dissertation 3d Putrifaction is not attended with with any generation of heat. A Whale putrifying on the sea shore does not contain more heat than that which it derives from the surrounding atmosphere. A human body that perishes of a putrid fever loses all its heat soon after it parts with its life. Even before death the heat is much less than before the pu=
=trifaction has taken place; as in Pneumonia & Rheumatism. The heat moreover which is generated in fermentation is confi=
=ned to the vinous state 4thly I object to this hypothesis be=
=cause all animals which breath as we do have the same de=
=gree

degree of heat; as the Elephant and the mouse. Now this would not be the same if the heat was owing to putrifaction; the heat would be in proportion to the quantity of matter.

2.dly A Second Hypothesis is that Animal heat is generated by the friction of the fluids against the solid parts of the body. To produce this bodies must be 1st uneven, now we know that this is not the case; the bloodvessels are smooth when the blood circulates 2.dly To produce heat by friction it is necessary that one of the bodies be fixed; there is no heat generated by the paf=sage of a rope thro' a pully. 3.dly the blood does not circulate with sufficient velocity to produce heat by friction. —

A 3.d Opinion is that heat is produced by the friction of the particles of the blood. This cannot be: Water & Quicksilver two different bodies will produce no heat if agitated till the end of time. It belonged to Chemistry to produce the only theory that could explain this phenomenon. The theory first advanced by Dr. Black which supposes that the proces of heat is the same in the lungs as in a culinary fire place that phlogiston is

is emitted from the lungs in the act of respiration is the best. I perfectly agree with French Chymists who suppose that oxygen is absorbed during the process. We all carry a fire about us- the Lungs are the Chimney of the body and discharge the smoke by the mouth. That it is the air which produces animal heat I infer 1st from the absolute necessity of it to produce life - 2d from the quantity we take in- a gallon every minute - 3d from the losing a part in the lungs 4th from the change it undergoes 5th from that which is discharged being less warm 6th Arterial warmer than venous 7th heat from exercise which increases respiration 8th from the Analogy of combustion & respiration.

The temperature of the body is the same in all countries viz 96°. Why so? Because the diaphoresis from an increase of heat cools the body by evaporation; hence the reason why reapers sink under a great degree of heat if it be not followed by sweating. But animal heat sometimes breaks through all limits & accordingly a young Lady of the state of N. York who went to bed quite hearty was in the morning burnt entirely up

up except the bones. Some suppose it was the candle, but that could not be otherwise the linnen would have been con=
=sumed, which was not the case; it could be accounted for on no other principle than combustion from the heat of the body. Why may not heat be subject to an Error Loci as well as blood? This accounts for the extravagant passage in the book of Job - In the stage of fever called the Causus where the patients skin is so warm as to be disagreeable to the person who feels it, is an instance - let us only stretch our imagination a lit=
=tle further & we may concieve combustion. Animal heat is a decomposition of air in the lungs. No animal can live without air - the air discharged is phlogisticated - the same happens to vegetables - Nothing exists in vain - Animal heat is alike in every part of the body; & unequal distribution of it constitutes disease. Mr. Hunter says that heat is one degree less in sleep than in a waking state - This Gent: I can assure you is a fact, I experienced it on one of my own children; it is likewise a little less in old age. Its uses

uses are 1st to keep up by its stimulus the motions of the bo=
=dy 2d To promote the fluidity of the blood 3d To promote di=
=gestion 4th To render sensation more acute, viz Smelling Tas=
=ting Feeling &c 5th To render the Muscles more sensible and
6th To add beauty to the person. Hitherto we have considered
life and heat only we now proceed to the consideration of
motion. This is divided into Voluntary Involuntary & Mixed.
The 1st are certain motions of the limbs 2d the action of the
brain Heart & Arteries 3d the only one is respiration. The
origin of involuntary motion is as difficult a subject as ever
engaged the attention of physiologists. Dr Berkley proposed a
theory which if admitted solves the difficulty at once; he sup=
=poses those motions at birth to be voluntary but as we ad=
=vance in life by habit; they are performed without our be=
=ing conscious of them, as we can walk a considerable dis=
=tance without being sensible of it. I wish I could adopt
the doctrine of Volition. I object to it 1st as being entirely
hypothetical. No person can recollect the first impression of the

the mind to motions. 2d there are instances of children being born without brains consequently without a mind & yet the involuntary motions of life existing for a considerable time & in a state of perfection 3d these motions are attended with fa-=tigue which is not the case with voluntary ones. I know of no cause to solve the difficulty, but to allow those parts to pos-=sess more excitability than other parts. It is a wise provision of nature not to put them dependant on the will - it preserves life in the sleeping state whereas was it otherwise directed all our time would have been employed in regulating their actions. In examining a body in a living state we view with admiration the action of respiration - it consists of inspiration & expiration. How performed - Vide Dr Cullens Physiology. The lungs have very few nerves & very little sensibility or stimulability - Exper-=iments of Monro & Goodwin corrobarate it. Trachea most sensible. Surface of the Trachea & Lungs equal to that of the whole body. There are 3 or 4 pulses to one respiration. Causes of respiration are 1st. an uneasy sensation in the breast, owing

to

to an uneasy sensation from an Accumulation of blood there 2ᵈ by the stimulus of dephlogisticated air - it acts 1ˢᵗ by heat 2ᵈ by its purity - Abscess or Tubercles in the Lungs are not the cause but the effect of Phthysis Pulmonalis. Peripneumony when there is no affection of the Pleura, is not painful because the lungs are insensible. You will never hear a person say he has a pain in the lungs.

*Uses of Respiration* are 1ˢᵗ for the conveyance of de=phlogisticated air to the blood 2ᵈ for the addition of heat to the body 3ᵈ to discharge vapour from the lungs 4ᵗʰ to promote circu=lation where it might be languid as in spleen, diseases of the Liver &c 5ᵗʰ to keep up an equable circulation in the minute vessels 6ᵗʰ to assist in discharging the contents of the Abdomi=nal Viscera 7ᵗʰ to propell the contents of the Uterus in child bed 8ᵗʰ for smelling; a child sucks only by means of inspiration & sucking 10ᵗʰ for the formation of the voice. Respiration is performed differently in the male and female. A Girl moves her breast more and her abdomin less than a boy. This is wisely

intended

intended to favour gestation. When a child of 2 or 3 years old comes into a room at which time they wear the same dress it is a common question to ask - Is it a boy or a girl? This should never be the question of a Physiologist he should know without asking

Additional Notes to Lecr. 10th. Animal Heat is generated in the Lungs from the air we inspire. I know of no objection to this theory but the great degree of heat in a phlegmon at a distance from the lungs - this may be owing to a disengagement of latent heat from a different arrangement of the particles of blood. Dr Haller mentions the case of a man whose body was consumed by its own heat - he was addicted to spirituous liquors.

## Lecture 11th Novr 22d.

We come now to Coughing, Sneezing, Yawning, Panting, Laughing & Crying, each of which we shall proceed to describe.

1 Coughing - this arises from infection of the lungs - its use is

is to expell offending matter from the lungs: hence the Tussis Senilis of old people. Tis a good symptom in Consumption & pleurisy. Tis the effect & not the cause of Phthysis Pulmonalis.

2° Sneezing is a premonitory symptom of Catarrh, occurs only in its predisposition - never happens after the disease has formed - it appears at the crisis of certain fevers, is a good symptom - its use is to expell stagnated mucus.

3° Yawning generally comes on after fatigue in the morning & evening - it accelerates a languid circulation.

4 Panting its use is the same as Yawning

5 Laughter is a quick inspiration & expiration. Sterne says every time a man laughs he adds to his life, when moderate it is conductive to health. Tis most necessary in the evening after the fatigue of the day hence the reason & use of public amusements & festive entertainments at this time of the day. Hiccough is a sudden convulsive motion generally comes on after immoderate laughter & occurs in diseases of direct & indirect debility. 6 Crying several quick inspirations & expirations

=nations followed by one deep inspiration & expiration. It pre=
=vents the indirect debility of joy & the direct debility of grief
by promoting the languid Circulation.

Physiology is to Anatomy what Philosophy is to Natural History.

## Of Voice & Speech.

The instruments chiefly concerned in the formation of voice are the Trachea, Larynx & Glottis. It is most perfect when the air passes through both nose and mouth - it has been the opin=
=ion of Physiologists that sound is produced as from a chorded or wind instrument or both; the former of these was formerly my opinion; but I have forsaken it. I believe all the variety of sounds is produced as from a wind instrument. If the lungs be inflated & the wind emitted it produces sound. The Uvula con=
=tributes much to sound. The varieties of the voice is modulated by the varieties of the motions of the Glottis, which are said to be 6632 in number. Sound is divided into acute and grave Strong and weak - in the former the Glottis is contracted & the

more

more acute the tone the more is the Glottis straitened. The stopping of the voice in very acute sounds is owing to the Glot=
=tis contracting entirely and in the bare low sound, the Glot=
=tis expands in proportion to the graveness of the tone, untill it is expanded so wide as to produce no sound at all. Singing is the protraction of the voice. At the time of puberty the voice changes to be hoarse; owing to the expansion of the na=
=val and frontal bones. Pasions considerably affect the voice, in anger it is quick & strong if therefore the voice were suppressed it would moderate anger. Voice is different in different coun=
=tries in different families & in different States of America. In the exercise of speech man stands alone. Speech is wholly imi=
=tative a boy brought up with hogs had a voice similar to them It is a mechanical impression. When children have no speech they have no language. I know two instances where children did not speak before they were eight years old. The recurrent nerve is essential to life. Formation of the voice & a seperation of it is attended with aphonia it is acquired with great difficulty

Speech

Speech begins in the Larynx extends to the tongue & ends in the lips. Man does not posses locomotive powers till after birth. A Child may be made to speak sooner by striking its lips or rather playing with its lips with the fingers. Crying Laughing & Crowing are means Nature makes use of to supply the place of speech. The difficulty of pronouncing foreign languages pro=perly is owing to the Muscles for forming the Speech becoming callous as it were from habit. From the age of 12 this callosity takes place. Hearing & Seeing are the Medium thro' which we learn to speak. The vowels are the Skeleton of the speech. By speech we carry on the Business of the world; to worship our Creator & keep up an intercourse between man and man.—

## Additional Notes to Lect^r 11^th^

Indolence influences language; because fewer muscles are to be exercised instance the Indians of all nations notorious for it, have dull & imperfect languages. Amanas a Dutch=man first taught the dumb to speak. It may be done by frequent=ly pressing & stroking the Larynx to supple it, and by written directions

directions as they can be taught to write they may be taught to pronounce the word paper, by informing them to close their lips & propell their Breath twice through them; as pa-pa &c I once taught a boy in this City to pronounce the word Veal which he used to call "Abeal" by directing him to press his under lip to his upper teeth. There are men called Ventriloqui; from a supposition that they speak from the Stomach. but it is false.

## Lecture 12th Novr 23d ——

**The Circulation of the Blood.** We shall treat 1st of its course. 2d Of the peculiarities of the functions which circulate the blood 3d The power moving the blood & 4th of its important uses. Its Course. Action of the Arteries & ventricles of the heart is supposed to be synchronous. The Systole is the contraction the Diastole which causes the pulse, the dilation. It may be proved 1st by the phenomina of Hemorrhagies. 2d By the situation of the valves of the heart 3d the valves of the veins, favouring the circulation of the blood

towards

towards the heart 4 By ligatures as in bleeding 5. Injection
6 From tying the veins &c 7 Transfusion. The blood is absorbed
by the veins from thence carried to mix with their kindred
fluids in the ocean of blood the heart. 2d The Peculiar-
-ities in the Junctions which circulate the Blood.
1st The Heart beats 5000 strokes in an hour; & during the lon-
-gest life it knows no interval of repose. It moves the Brain
& is again moved by the brain. Two ounces of blood are discharg-
-ed from the Heart at every pulsation. It is a hollow muscle pof-
-sesing all the properties of muscular fibres of other parts. It pof-
-sesses exquisite sensibility & Irritability — after death it may be excited
by water, Air, Electricity &c. The right ventricle beats longer than
the left by 7 strokes. It is surrounded by the bones of the Thorax, &
pericardium, & is supplied with blood by the coronary Arteries.
2dly Arteries have their coats posesing great mechanical Elasticity
and are supplied with blood by the vessels called the Vasa Va-
-sorum, they become strong as they recede from the heart: hence
the reason why Aneurisms are found in large bloodvessels near
the

the heart are circular or cylindrical branching off at acute An-
-gles, they Anastamose thus avoid the bad effects that might arise
from Aneurism, and are well defended, running under a muscle.
3° Veins. They have a muscular, or coat valves, are larger than
the corresponding arteries & strong in proportion to their distance
from the heart; they are more superficial. I have concluded that
bleeding was originally intended by the Creator as veins are super-
-ficial. A Varix is to a vein what an Aneurism is to an Artery.
The veins are weaker than the Arteries.

3° Powers which move the Blood. 1st The Heart. 2d Specific
stimulus of the blood 3° Distention of the ventricles. 4 Influx from
the Brain 5th Dephlogisticated air 6th Contractility & Irritability of
the Arteries & veins, because 1st from the pulse in palsy being
more forcible on the affected side. 2° From the moving after the
heart ceases to operate; & hence they are found destitute of blood
after death 3° they have nerves and muscular coat; this is pro-
-ved by Dr Verchun & Dr Haller indirectly consents to it.
The Arteries therefore posses a contractible power inherent in
themselves

themselves. Tis important Gent: 1st In the veins the pulsation of the contiguous Arteries 2d Action of the Muscles 3d Respiration 4th a peculiar irritability which is proved by Dr Perchus 5th the mixture of the lymph with the blood. There may be reckoned to be 28 lbs of blood in a Man. There is unequal action in the arterial system in Fevers; it depends much on the action of the muscular fibres. The arteries are according to the immortal Harvey the "primum movens et ultimum moiens" of an Animal. It is from the irritability of the Arteries I found my theory of Fevers. The Arterial is the system from which we are to discover the latent secrets of philosophy & the seats of diseases. The bloodvessels are as Centinels to the body. they watch while other systems sleep. The Uses of the Circulation are 1st to support the action of the Brain 2d To convey heat to the different parts of the body 3d To avoid humidity 4th Tis the fluid from which all the secretions are made 5 To nourish the body 6 To impart irritability & contractility to the bloodvessels 7th For the supply of nervous fluid which I think is produced by the friction of the

blood

blood with the bloodvessels. I cannot quit this subject without pay=
=ing a tribute of gratitude to the illustrious Harvey. He was
a discoverer per se. Calumnies were propogated against him, but
the truth at length prevailed. The motions I have mentioned
are not the only ones. The Lymphatics & Intestines act without
the intervention of the will. I am of opinion that there is no=
=thing in the Animal Oconomy which will not be discovered.

We think our Fathers fools so wise we grow
Our wiser sons I hope will think us so

**Of the Nervous System.** In the Nervous System we in=
=clude the brain, Nerves, Tendons, & Muscles. Upon this subject
Gent: physiology must be dumb. It posses a vast tract of Terra
Incognita. I commit it to posterity. I have no doubt but it will
be known. It is worthy of remark here the difference of sen=
=timent of Dr Monro & Cullen of Edinburgh; the former would
remark, in his Lectures on a difficult subject by saying "la=
=tit et semper latibit". The latter by saying "dies doceat" or
"dies docebit". You see I adopt the sentiments of my illustrious
master

master Dr Cullen. The Brain is the seat of the Soul or Mind. This I infer from many of the senses being seated near the brain 2d Tis the origin of the Nerves. The Arteries are more flexible in it than in any other part. According to the opinion of Dr Haller it contains 1/6 & of Dr Monroe's 1/10 of the blood of the body. 4th the Brain secretes a fluid thinner than the blood. 5 The veins are more dilatible & have no valves till they pass out of the skull. 6th No Lymphatics are discovered in the brain. 7th There is more brain in Man according to his size, than in any other Animal. 8th Skulls differ materially in different nations. The understanding is in proportion to the size of the Brain. There are more nerves sent to the muscles than to the other parts.

Additional Notes. The Contraction of the Heart & Arteries sometimes arise to an extraordinary height. even Bedclothes have been seen to move. & the Sternum has been protruded by the pulsations of the Heart.

Lecture

# Lecture 13th Novr 24th.

The senses are all modifications of the sense of Touch. Nerves are 1st a continuation of the medullary portion of the Brain. 2d Send of the branches at right angles 3d the more nerves the more sensibility 4th the mediums of sensation & motion. 5th have serpentine lines the use of which have never yet been dis=covered 6 very little Ganglio. which Dr Monro supposes to be little brains or in other words to afford fresh energy 7th do not act by vibration but by a fine fluid passing thro them. it is Ether according to Dr. Cullen. by some it has been called an electric fluid. I say it is different from an electric fluid; it differs 1st

2d in the manner & matter by which it is conducted. 3d The electric shock disposes matter to putrifaction. with respect to the nervous fluid it is directly the reverse. Mr Fowler proves the difference. The Brain & Nerves are different they are only connected by justa position. The dissimilitude of the electrical & nervous fluids should not surprize us. Nature delights in va=riety. Some symptoms in nervous diseases may be accounted for from

from convulsions of the Nerves. for instance Milk is made sour by the electric spark. Now we find milk of nerves subject to nervous diseases, sour. May not this be owing to too great an in=fluence of electric fluid? This fluid originates from the blood rubbing against the bloodvessels. I have several reasons for this opin=ion. Muscles are small bundles of fibres they are invested and connected by a membrane; they are not continuations of the nerves as some have supposed, they are connected by juxta position. Thus far a plain road. We have now come to a wilderness. Mus=cles are the organs of motion. nerves of sensation; & Brain of thought. Is there any such thing as vis insita? Dr Monro thinks not. I adopt with some limitation the vis insita of Dr Hunter & Dr Haller. The vis insita exists independant of the brain, & it re=mains in the body after the nerves are destroyed. Nerves are not disevered from the brain; but are connected to it as they are to the muscles. Muscular elasticity differs from other elastic motions. Having finished the different kinds of motion I shall relate the means by which they are put in motion. The first effects of im=

impression are sensation and motion. Sensations are simple or reflex - Reflex are pleasant or painful - Pleasant are agreeable pleasurable & delightful - Painful are disagreeable uneasy and painful. Impression and Sensation are frequently different the first may exist without the latter - as purges for instance have great impression but little sensation. And Stone in the kidney does not effect the part where it is lodged so much as the Stomach or op=
=posite kidney - Sensation is modified from different stimuli - Who could imagine from examining the different particles of light, that they would make the sensation of Colours? Cullen from this in=
=ferred the immortality of the soul. Thought is an effect of Im=
=pression

Laws of Sensation. Impressions long applied are called attention. 1st all in proportion to their force 2d in proportion to their duration 3d Only one sensation can be excited in the mind at once - thus if I pluck a hair out of your head and at the same time strike you a blow you will only feel the blow - hence no two diseases of different kinds can exist in the same body at the same

time

time - neither can two epidemics of unequal force prevail in the same neighbourhood at the same time. This fact is of great use in medicine. Two ideas striking the mind at the same time produce a Tertium Quid. If blue and yellow be presented to us at once they give us the sensation of green. When stimuli is numerous the strongest the strongest is only percieved hence the propriety of of giving medicines only in a simple form. Some sensations will continue for minutes others for an hour after the impressions which excite them have worn off. The more understanding or in=telligence an Animal is possessed of the more sensibility it has; hence probably the beetle we tread under our feet feels more pain than a giant would. The sensation a person feels in a limb that is cut off. I shall hereafter prove depends on an association of Ideas. Every sensation proceeds from Volition. Impressions in dreams are stronger than in a waking state. Memory called Idea is divided into Reminiscence & Memory properly so cal=led. the first constitutes the recurrence of former impressions; as when I meet in the street a former schoolmate whom I have not

not seen for many years; I immediately recollect every thing con-
-cerning him.— An Association of Ideas is called Judgment. In
memory we distenguish between the sleeping & the waking state
& Sensibility & Initability. The first is supposed to be inherent
in the Nerves the last in the muscular fibres. They are not equa-
-ble in a healthy state e: g: the heart has little sensibility but
much initability. Custom & habit influence both sensibility &
initability. 1st All sensation most acute when first applied; for
instance we lose the sensation of heat & cold by their being long
applied 2d Old people require more heat than Young. 3d Some sen-
-sations produce pleasure & pain by repetition for instance. To-
-bacco and Brandy which were at first disagreeable by habit be-
-come agreeable &c "Assume a virtue tho' you have it not
"That Monster Custom &c" Shakespeare
4th Certain impressions by repetition lose their force as Anti-
-mony Jallep &c 5th Sensation by comparison become more or
less acute by repitition 6th Any two sensations acting at the
same time from habit are ever after connected. 7th Ideas from

succession

7th Ideas from succession afterwards acquire certain order. Habit becomes correct by repitition. Tension of the Muscles is generally influenced by repitition. In these there exists init=ability at the expense of sensibility. Certain actions at first voluntary by repitition become involuntary as respiration wink=ing &c It gives strength to the Muscles regulates their action, associates action with sensation which is not the cause. We generally go to make water before we go to bed even if our blad=ders be empty. It associates motions not before connected; as the hand & foot we move at the same time. Repitition regulates the return of certain sensations; it fixes an exact time at the return of any Period. We Wake at the same time every morning. An Idiot who used to call the hours with a clock could call them with as much exactness when it stopped as when it continued going. Intermitting Fevers may be accounted for by calling in the association of sensation & motion; also all the periodical diseases. Sympathy is divided into active and passive Active sympathy is increased in proportion as passive is dimin=ished

=ished. The body exposes three surfaces of action. Muscles, Sentient extremities of the Nerves, & the Mind. Wine & Opium act on all these systems Vide Dr Wights Nervous Diseases, Dr Hunter on the diseases of Jamaica a valuable book. get it. Sym=
=pathy may be accounted for without the intervention of the Brain - As 1st the itching of the Glands & Penis in affections of of the bladder from calculi. 2d Pain in the Teeth produced by the rasping of a File - 3d Risings in the Throat in Hysteria 4th Itching of the nose in children affected with worms. They ap=
=pear to produce it by a membrane running from each part. All there unite to produce Motion.

Senses & Organs of Sensation. The Brain is the seat of conception. It may be compared to a large city & the Nerves the Avenues leading to & from it. —

Additional Notes. The electroid or nervous fluid is generated by the friction of the blood against the bloodves=
=sels, this supposition derives strength from the great quan=
=tity which is generated in the Brain; to which organ there is

is so great a determination of blood. —

Sensation is divided into simple & reflex the former is confined to the nerves the latter to both brain & nerves. Im=pression in one part may produce sensation in another - for instance - a stone in one of the kidnies produces a sickness at stomach, vomiting, a pain in the opposite one &c A stone in the bladder a pain in the Glands Penis &c. Children have no memory; or in other words judgment. they have only Remin=iscence - thus when a childs nurse leaves the room it cries but immediately forgets her till her return. Different opera=tions of the mind much influenced by association. When it is destroyed derangement takes place as delirium &c Sympathy divided into active & passive. Active sympathy is in the in=verse ratio of passive it is carried on thro' the medium of the membranes of the body & not as is generally thought by the brain. Blisters relax the part to which they are applied & by sympathy the whole body

Lecture

# Lecture 14th Novr. 25th

Of Touch. The other four might be said to be of the same genius. It extends over every part of the body where it be=comes the vehicle of many curious impressions. Hungar and Thirst make the senses more acute (vide Yellow Fever) It is the least fal=lacious of any of the senses for the body must come in contract, whereas the other senses are through the medium of the air. It is from this sense many tell the approach of bad weather. The body is covered with 1st a skin called Epidermis or Cuticle 2d Rete Mus=cosum, & true skin 3d connected with the skin are little Glands they produce moistness 4th besides these are sebaceous Glands 5th Hair comes from the cellular texture under the skin 6th Cuticle & true skin extends to the inside of the Anus, Uterus, Mouth, &c. hence medicines applied externally produce good effects in internal dis=eases, especially in diseases of the bowels and stomach. Who knows but sympathy may be owing to the extension of the Cuticle. This is a circumstance of importance. Those parts where there are most blood are most sensible. Sensation in parts is increased by the

the fulneſs of the bloodveſsels Vide Bell & Monro on Aneurisms.
There are different nerves for the conveyance of different senses of
the brain. The tips of the thumbs & fingers are more sensible than
other parts of the body; they discover bodies accurately, more so per-
haps from being very smooth & we may always feel more distinctly
if we use three or four fingers at once; hence when we feel a
pulse we apply all four of our fingers. For the more acute fee-
ling, there must be no compreſsion of the brain, no obstruction
of the Nerves that the circulation of the blood be free, nor cold
in the fingers. Some persons have been known to discover colours
by this sense only. Silence and the eyes shut in darkneſs by
concentration make it more acute; hence when feeling the pulse
you should shut your eyes and command silence. To touch we
are indebted for all our primary sensations by it we distinguish
Roughneſs Smoothneſs, Hardneſs, Softneſs &c. The starting of a
horse seems to be owing to his ignorance of bodies from his want
of the sense of touch.

Of Taste. — This is seated in the Tongue 1st. It can be ex-
cited

excited on the tip and edges only 2° The nerves project in small emenenus called papillo 3° It is supplied with nerves from the eighth and ninth pairs for common sensation; but the 3d branch of the 5th pair for the sense of taste particularly 4th Bloodvessels 5th Object of taste. Bitter Sour Sweet Rough &c. Insipid substances act negatively 6th All tastes are excited by a sapid quality exuded from the tongue. Solution & agitation necessary. Dry tongue no taste. Cheese destroy the ~~taste~~ sense of the taste of wine 7th The Atmospheric air influences taste. A Mellon does not relish on a cold nor Coffee on a hot day. How far may not this constitution of the air be necessary to the production of contagion. A denudated tongue makes an erroneous taste, it is sometimes transferred as to the roof of the mouth 8th This perfected by habit and custom. There is a Wine Merchant in this City Mr. Hill who is able by the taste alone to distinguish all the different wines that come from different vineyards in Madeira. There are many who can tell whether it was drawn from a cask or a bottle & whether it be the least adulterated merely by the sense of taste. It is

a

a relative quality as well as touch; & like it is not indepen-
-dant of the other senses. The tongue has a connection with every
other part of the body. We make sacrifices of many medicines by
giving them in the form of pills, they ought to be given in the
form of powders or solutions— it serves to distinguish the agreea-
-ble from the disagreeable. How shall we account for the varieties
of tastes. Bacon and others suppose different tastes to be owing
to salts different from each other in nature and figure. Reid
supposes a peculiarity of the Nerves to make the difference, this
last was a near approach to truth. Are there not original tastes
answering to the original colours & modifications in colours?
Vide my 1st Vol: Eng: & Obs:

Additional Notes to Lectr.— 11th Besides what are
mentioned as contributing to the sense of touch I shall men-
-tion 7 Bloodvessels particularly when distended— instance the
Lips, Nipples, Glands Penis &c.— 8th A different set of nerves
9 Circulation. Amputation less painful when it is stopped.
Touch— Eyes teach nothing without this sense— it constitutes a
great

great part of the superiority of man to the brute creation. Taste it cannot be excited without moisture. Cold deprives sapid bodies of their taste. This sense may be translated. A Girl born without a tongue enjoyed this sense to a very great degree in the roof & other parts of the Mouth. —

## Lecture 15th Novr. 22d. —

Of Smelling. The part where this sense is situated is the pituitary membrane which lines the internal surface of the nose. The size of the ossa spongiosa particularly influence the sense of smelling. but I exclude your Ethmoid Bone, Maxillary & Frontal sinuses from having any thing to do with smell. Mucus & moisture which proceed from the arteries are essentially necessary to the perfection of this sense. Inspiration necessary; the shorter & quicker the more acute the sense of smelling also by shutting the mouth. Dr Reid supposes there is a variety of senses in the nose accommodated to the variety of odours. Sneezing assists smelling by stimulating the membrane of the nose & by throwing

off an inspisated mucous. This sense has an extensive connection with every part of the body - with the Bowels, Stomach, Lungs, Brain Nerves &c We sneeze from the sudden application of light & strong odors sometimes produce tears. Tis the Centenel of the body in delivering us from the various noxious effluvia. Tis a source of great pleasure and is sometimes transferred. Con=tagion acts most frequently thro the medium of the nose; tho' it sometimes act thro the pores of the skin stomach &c. Some animals by this sense seek their food. Eagles that soar so high in the air, so that it is impossible for them to view objects find their food merely by this sense. Elephant its proboscis is an ex=tension of olfactory Nerves. Hounds their long noses & perfect smell. Le Cat mentions a monk who had this sense in so refi=ned a degree that he could distinguish a married woman from a virgin this was by means of the perspiration. The Bramins who live entirely on vegetable food can with accuracy distin=guish a man who lives on animal food. Air taken into the lungs thro' the nose is warmed hence the reason why consumptive

peoplee

people stop their mouths on a cold day. A Man may lose the sense of smelling thro the medium of his nose & afterwards have it in his Stomach.

Seeing. To do justice to this sense would require a whole course of lectures. It differs from taste & smell in not being confined to a single organ. It is furnished with an Eyebrow and Eyelid to keep the sweat from falling into the eye & the inconvenience of too much light to secure it also from particles of dust floating in the air. Our Creator has furnished us with two they give symmetry and beauty to the face. The Eyelids consist of six coats. It has muscles to facilitate its motion in every possible direction it likewise possesses Glands for the purpose of moisture. Each eye has six coverings. 1st Tunica Conjunctiva or Adnata 2 Sclerotica 3 Cornea which is distinct from the Sclerotica; this favours juxta position 4 Choroides placed under the Sclerotica has a ring called the Ciliary circle contains the Iris, some late Dissertations shew the Iris to be flat contrary to the common opinion. It also contains the pupil Uvea &c

5th

5 Tunica Albuginea 6 Retina which is an expansion of the Optic Nerve. Its humours are three the Aqueous, Crystalline & Vitreous

Light. It pervades our whole solar system. The particles do not travel instantaneously from the sun as has been supposed; but the sun is to light what the brain is to the nervous system. Light diffused thro' our atmosphere exists independant of the sun; & the presence of the sun only wanting to put it into action. In Darkness the light is latent & the sun renders it sensible. The sun is a great body of light. Light vibrates exactly in the same manner as sound: Yet who supposed the particles in contract with the ear. Light is a mere quality like Life & the sun is to light what dephlogisticated air is to life. Fine as light is it has not escaped Analysis. Sir Isaac Newton by means of his prism; discovered the different species which constitute the seven colours Violet, Indigo, Blue, Green, Yellow Orange & Red. Colour is a mere quality of matter. A substance appears white when it reflects all the rays of light Black when it

it absorbs all. Red is the most refrangible. Violet the least so — When the rays of light strike a body without injury they are said to be reflected. When they are broken they are said to be re=fracted. I suppose the retina to be the immediate ~~coat~~ seat of vision. The rays of light fall on the Cornea a part forms a focus on the retina. Cornea is sometimes too convex at other times too concave Vision is most complete when we can see best to read at the dis=tance of a foot. Pupil is contracted in light & dilated in dark=ness. In the parrot the passions are discovered in the pupils. We find the Grey & Blue eyes in northern climates, where the light is more ~~glaring~~ scanty. Objects are painted in an inverted position on the retina= this is both natural & necessary. Many have ascribed our viewing objects aright to habit- but I deny it- for we know there are instances where blind from their infancy & at an advan=ced age are brought to see- in these objects were represented uprightly. Why do we see but one object when there is the image of two painted on the retina? I answer because we can have the sen=sation of but one at a time We see only a tenth part better

with

with both eyes than one. Objects contract when we view them near & vice versa. Why pain when brought from darkness to a great light, owing to the too great stimulus of sudden light. Why is the eye rendered soft and languishing by looking on a black object. Because it reflects no rays to stimulate it: Hence a hint to you Gent: when you visit your Dulcinea to look for half an hour on some black object, as a piece of black cloth to give your eyes a languishing appearance when you come into the pre=sence of the Idol of your Souls. Green is a colour which is fa=vourable to vision it is a colour we never tire looking at, hence the verdure of the earth. It has a preeminence over all the other senses. It is the mirror of the soul & masterpiece of Nature. We are told of a Gent: who after seeing the perforatus & perfo=rans of the hand lay awake all night shutting & opening his hand. But if he had contemplated the eye he might have kept awake for ever. To preserve the eye the muscles must not be contracted do not read on your back or perpendicularly, recieve the light from behind, wear spectacles as soon as the

eyesight

eyesight begins to fail.

## Additional Notes to Lect$^{r}$ 15$^{th}$.—

Smelling. Young people posess this sense in a greater degree than old; because posessing a greater degree of heat, because the superfluous fluid secreted in the nose is dispipated. This sense excites association of Ideas. Some Animals posess it to a high degree as the Elephant, Hound, Eagle &c. D$^{r}$ Boerhaave mentions an Elephant which seized with his proboscis a piece of money from amongs a thousand others, by the smell as it had passed thro' the hand of its master. Seeing - the contraction of the pupil of the eye is effected by the relaxation. The dilation by the straitening of the Iris. Some animals have large pupils they see better in the night than those with smaller pupils. Vis-ion is easiest performed when fewest muscles of the eye are in motion. You ought then Gent: to hold your books almost ho-rizontally with your eyes to see most perfectly. Deprived of this sense so highly important how imperfect our Ideas of

Nature

Lecture

# Lecture 16th Novr 29th.—

Hearing. Previously to entering upon this sense it will be proper to mention the nature of sound; which is divided into noise and sound properly so called. Not only the air but the earth is a medium of sound; this I saw an instance of last war, at the battle of Brandywine— I was surgeon to the army; at a distance from the place of action by the violent vibrations of the ground, produced by the cannonading I percieved a field before me covered with a thick cloud of dust about 3 feet from the surface; & a soldier stationed at Easton about 50 Miles from here by sticking his knife into the ground & applying his ear to it; told his companions that the City of Philadelphia had surrendered; for the canonading he said had suddenly ceased; the report a few days after shewed he was not mistaken Water is likewise a vehicle of sound. May not the air consist of different kinds of particles, as light does of colours. All surrounding bodies vibrate & the more elastic and tense the more sound. Sound is in proportion to

the

the stroke Air is said to be the vehicle of vocal sounds. Fe-
-mors of a Bell pass from an oval to an eliptical form. Sounds
are divided into acute and grave. When many vibrations are emit-
-ted the sound is said to be acute & vice versa. there must at
least be 30 vibrations in a second to produce sound 7520 Vibra-
-tions in a second is the highest possible acute sound. Sound dif-
-fers with respect to the length of the cord, the more elastic and
tense the more acute the sound filing of iron produces acute
vibrations & like in the nerves of the Ear. Tympanium sometimes
ruptured when it cannot vibrate so quick as a sounding body.
Unison is when there are the same number of vibrations in a
given time tho' there be different instruments of musick. —
Sound produces violent concussions - the walls of Jericho (as
recorded in the Testament) fell in consequence of the sound
of a Horn. Sound extends to inanimate as well as animate
matter. Air is absolutely necessary to the conveyance of sound
A bell in an exhausted reciver emits no sound & a pistol
fired at the top of the peak of Teneriffe could not be heard
by

by the person who discharged her. Sound is different in a fur=
=nished and unfurnished room. I heard of a blind man who
could at any time tell whether he was in a furnished or un=
furnished room by the voices of the people talking in it.
Sound like light is reflected & then called echo it travels
1120 miles in a minute. Hence Philosophers tell the distance
Lightning is off by counting the seconds between its appearance
& the noise of thunder.

Structure of the Ear. (Vide Anatomical writers) physi=
=ology may be compared to your A.B.C. Pathology to reading
the Testament as we are now at A.B.C. I hope Gent: you will
pay attention to me. Ears of savages more prominent than
those of civilized nations; because their ears are not compres=
=sed by caps &c in infancy; their ears are consequently better
adapted to recieve sound, hence their activity in hunting. You
may facilitate hearing by raising the edges of the ear & for=
ming around it a cavity with your hand. You also hear bet=
=ter by being in a direct line with the orator. Smoke never

passes

passes from the mouth out at the external ear unless there be a rupture of the Tympanium. The Eustachian tube does not convey sound to the ear for instance if you put a watch in your mouth in such a manner that no part of it shall touch your teeth you cannot hear its ticking. The ears of children are filled with mucous wisely intended to prevent any bad effects from immoderately strong sounds on their tender organs. We learn the direction & variety of sounds from experience. The sense of hearing is not an independant one, the Teeth & bones of the Jaw, Nose, Eyes & Mouth convey sounds to the ear. There is a great connection between the human voice and hearing The Cochlio Ducto &c are to the ear what the Retina is to the eye Reid and others suppose that a taste for music requires a certain arrangement of the parts of the ear. This I deny every person has an inate capacity for acquiring a knowledge of musical sounds. Senses are sometimes deceived 1st by a partial application of them 2d by acquired senses 3d by an ignorance of nature 4th by disease. Deprived of this noble

sense

sense says Le Cat we suffer a premature death. Hearing is somewhat indebted to the eyes. Hence we hear better when we look at the person speaking we hear better with the mouth open. Some hear better in a noise. Dr Johnson could hear only in his carriage when rattling over a pavement. Some can hear most distinctly when the drum is beating. I knew an instance of a man who could only hear in a room where there was musick playing. the reason is because the sounds give tension to the Tympanium. I cannot take leave of this subject without remarking that Philosophers would wish to make us believe that our senses & even ourselves are mere illusions of fancy. To the Practitioners & Profesors of the sublime art of medicine it therefore belongs to furnish us with our Reason, Faith, Senses & Speech which Philosophers, Ministers & Schoolmasters would with to deprive us of.

## Lecture 17th Novr 30th

### Of the Faculties & Operations of the Mind. We come now

now Gent: to speak of the human mind and its faculties be not startled at the sound without a knowledge of the mind a Physician neen never enter the cells of an Hospital nor visit a patient in the delirium of Fever. 'twould be as ab=surd as to attempt to operate for the Stone without a know=ledge of the Structure and situation of the bladder. Some physicians turn up their Noses at it. It is divided into faculties and Operations. Judgment & Reason are not fa=culties they are Operations. Here the great Question arises "is the Soul material or immaterial"? Locke was of the lat=ter opinion. Dr Reid opposed him & was followed by Dr Cul=len. Dr Priestly thinks that the soul rises with the body at the resurrection. it is thought that the promised death of Adam was Annihilation. The senses or Soul is suspended during sleep or Apoplexy. Van Swieten related the case of a man who asked his servant for a glass of Wine and immediately fell into an Appoplexy. he lay a long time apparently dead; but was ul=timately recovered the first thing he said was to call hastily to

The faculties of the Mind are 1 Memory. 2. Imagination. 3. Understanding. 4 Will. 5 Passions. 6 Principle of Faith and 7. Moral Faculty. This last is divided into Moral Faculty, properly so called. Sense of Deity, and Conscience—

to his servant "why dont you make haste & hand me the wine"
It is urged as an argument against the materiality of the soul
that it would be mortal & liable to decay - this is founded on ig=
-norance. Matter is as indestructible as Spirit it may be divi=
=ded and subdivided but cannot be annihilated. It is in the
will of the Deity alone to destroy it, 'tis "thro' him we live &
move and have our being" Another argument is; they say mat=
=ter cannot posses thought as spirit. For a more thorough in=
=vestigation I refer you to the controversies of Dr Price & Priestly;
it is not for me to decide on this important question. It is enough
for us as physicians to know that the body acts on the mind &
vice versa. Its materiality or Immateriality will not affect the
doctrine I am about to deliver.

## Lecture 18th Dec. 1st 1796 —

Faculties of the Mind. These are Memory, Will
Understanding, Moral Powers & Passions - each of which in order.
1st Memory. It will be necessary to premise before we go further
that

* Dr Rush says there is no such thing as the Soul— Man consists of Bo
dy and Mind!!! And this mind is material—

that each of these faculties occupies a different portion of the brain that they are sometimes translated. Thought & Motion are nearly connected, the reason why very young children can=not contain incidents is that the softness of their Brains is unfavourable to retain impressions & in old age from the hard=ness of the brains hindering impressions being made upon it.

Memory is the most wonderful of all the faculties of the mind
Bo soul & is divided into the capacity for recalling and retaining. the former of these called Reminiscence the latter Memory. Reminiscence differs from Memory in this, that the object which excited it should be present Memory does not require its presence; a Child has reminiscence but not memory, as has a horse. It is my opinion that no events are ever forgotten that were lodged in the memory the same stimulus will put them into action.

It is divided into memory for 1st Words 2 Names 3 Numbers 4 Ideas each of which occupies a different seat in the portion of the Brain allotted to Memory- there are many instances of these. I read of a man who after hearing a sermon preached told

told exactly the number of words it contained - this is an in=
=stance of the third Cyrus who knew the names of every sol=
=dier in his army of the second. Dr. Nesbitt who had no me=
=mory for numbers tho' for every thing else it was very good.
there are instances of people forgetting their own names. Me=
=mory may be much improved by habit. There are tribes of In=
=dians who cannot count more than the numbers of their fingers
and toes. I had a medical student who informed me he could
understand every thing he read, but could remember nothing.
I advised him to learn a few lines by heart every day - by con=
=tinuing this practice a while, his memory became as good as
most peoples. This faculty distinguishes the Scholar from the
Philosopher. We learn more the three first years of our life
than for thirty afterwards says Dr. Gregory. I believe it. Ideas
are nothing but impressions on the brain - How numerous
must these be in infancy - every thing that presents itself to
your children is new consequently a new Idea or impression
is produced. In advanced age we acquire but few new Ideas,

we

we may learn a whole language without deriving a new idea. The brain is susceptible of a vast number of im=pressions. The Membrana Tympani of the Ear is suscep=tible of 20,000 different motions. Then how many the brain Civilization improves the memory. Indians can remember but little at a time Hence at a treaty they sit 10 or 12 in a ring on reading the proposals each when he has gotten as many Ideas as he can hold, or is saturated as it were (which requires but one or two) touches the next to him. & so on. they never return an answer immediately; but retire where each man clubs his proportion, to which their wise man returns an answer. The mind may be compared to a man playing upon a violin. the more he practices the more perfect he becomes. Tis remarkable the memory fails first for names 2d Faces 3d Ideas The memory is assisted by association. 1st When any thing is difficult to recollect place yourself exactly in the same situation as when you recieved the impression. Difficulty of recollection, that is when you try to recollect and cannot.

the

the excessive action inducing indirect debility, therefore we generally think of it when our minds are the least exercised as 1st in the Morning 2d by being connected with pleasure. 3d by being connected with pain: hence women always calculate from the birth of their children 4th by Arbitrary signs as a string tied round the finger &c 5 by sameness of sounds 6th by words Give me one line of Poetry & I recollect the rest. I have frequently recollected a name that I had forgotten by running over the letters of the Alphabet. A man wishing to recollect another name but not being able said it was like point no point, & immediately recollected the name to be Alexander Alexander. 7th by Association of letters hence a student recollected the umbilical Chord had two Arteries & one vein by calling to mind the two aa's in the last syllable of Dr Boerhaave's name 8 Custom 9 Interest. for further information consult Locke Reid & Beattie. The Countess of Leval when 12 years old by living among some welch people acquired their language but by removing away from

from them entirely forgot it when she was grown up it hap=
=pened that she was in a fever attended with delirium in
this delirium she was heard to speak a language that nobody
understood, but her nurse who was an old welchwoman & con=
=strued every word of it. this shews an idea once lodged can
never be forgotten.

Imagination. It effects all those discoveries not found out by accident it differs from fancy & memory but has no ex=
=istence without memory. Imagination is said to be sublime & elegant. Fancy rich and luxuriant, it includes future as well as past, imaginary as well as real, which memory does not is essen=
=tial to memory is an essential ingredient in Genius. Memory may be compared to a history. Imagination to painting or a Cham=
=era Obscura Memory resembles a ship moving with oars alone. Imagination to a ship with both sails & oars. It is a Columbus in discovering the actions of the world. Understanding combines ideas; it is the seat of reason & judgment, it is the touchstone of truth and memory. It is the rudder or skilful mariner &c.

Imagina

Imagination furnishes us with Ideas, the understanding puts them together. Vide Mr Edwards of New England on the Will. It is the only sure pledge & basis of Human happiness. The doctrine of free agency is abused, it encroaches on the rights of the Deity. Instead of making ourselves a Machine (with reverence I speak it) we make a machine of our Creator. Our doctrine places him on his throne exercising his free will with pleasure. Will is the seat of action & the passions are its executive officers. If by accident I put out your eye it is no sin, but if in a fit of anger I do the same action it is sinful hence "Voluntas facit peccatum" Passions are to the mind what the senses are to the body divided into 1st Propensities 2d Emotions as terror joy &c 3d Passions properly so called as Love &c. Emotions are not accompanied with diseases.

## Lecture 19th Decr 2d.

Moral Faculties are those portions of the brain to be acted upon, they are innate we have the capacity, but not the

† Conscience is the Regula Regulata, non Regulans —

the recieved impression hence they are gradually unfolded as we recieve impressions from without they are divided into moral Fa=culty so called, sense of the deity, & conscience the first is a Legi=slator it condemns the actions of others Conscience is a judge of our own actions. Moral faculty is a capacity "it is the light that lighteth every man that cometh into the world" (Rid my Med: Ing: & Ms: Vol: 2d) Sense of the Deity distinguishes man from the animal world. Man alone has a capacity for re=ligion 'tis an innate faculty it would be more properly ter=med the divine faculty of the mind. Concience is the regu=lans non regulata[+] it is never absent except in those who are diseased as it were. It may be compared to a high court of justice and Appeals which regulates the actions of the other Fa=culties. The operations of our rational faculties act slowly the moral instantaneously first thought in moral second in ra=tional faculties best. Truth has but one front if distinguished by one faculty it is also by the others. The rational faculties seem to have been given us from this world the moral from the

The Operations of the Mind, are. 1st Perception. 2d Association.
3d Judgement. 4th Reason.

the world to come. Conscience is like Mentor in Telemachus, it preserves us from many dangers - it may be called the Centinel of the other two faculties. Life may be compared to a voyage. These faculties are all extended by education. Query - are there not quiescent faculties in the mind yet undiscovered. I think there are. All the faculties are tributary to each other. they may be aptly compared to a well organized government 1st Memory to the house of representatives 2d Understanding to the senate 3d Moral faculty to a court of justice 4th Sense of duty to the religion observed 5 Conscience to the court of appeals — Government of the U. S. the best that can be formed it approaches nearer to the faculties of the mind. A certain portion of these faculties must exist to form a healthy mind.

## Operations of the Mind.

Every sensation produces an image on the brain - similar to that which a solid body does on wax & an idea is reproduced by a similar impression to that which first produced it. I shall treat of

1st Perception - it is the most simple act of the mind - 2d

Judgment

Judgment it is a combination of memory & understanding by which we form a proposition. perhaps it would be more properly called combination. for example. suppose a couple of pears to be presented to me the one natural the other artificial. I examine them & by remembering the feel, appearance, smell &c of pears which I have seen before & by my understanding I distinguish the one from the other, this is called comparative judgment 3d Reasoning it consists in deducing principles from ideas by means of which many discoveries are made both in nature and art it is not a faculty; it would with more propriety be called induction. There may be perception without judgment. Fools possess it in a very great degree but for want of judgment they combine their ideas wrongly. There may be judgment without reasoning powers. 4th Genius it has been compared to common sense but it is different. Genius travels on the wings of the wind while reason goes on foot 5th Ideas & Thoughts or Motions are non entities or mere qualities & as much effects as strokes from a hammer or

a

~~Application~~ Attention is the continued application of the mind to one object – Reflection is the continued application of the mind to all the qualities and properties of a Single object – Contemplation is the application of the mind to many objects –

a all. they are the effect of motion in the brain, excited by stimuli, hence a quality. A Man deprived of all the senses has no thought. hence in sleep no thought. Some Philosophers suppose nothing to exist in reality, but that all are ideas. in this case we are deprived of our bodies, senses &c & are entirely annihilated. The human mind eludes all our researches & what we cannot comprehend we must admire. Common sense - Opinions & Feeling. What is Taste. Wit is a sudden assemblage of ideas which strike us by their resemblance or non resemblance; the former is called truth the latter novelty. Reflection it is an Application of the mind to several objects, while perception is confined to one.

With this Gent we finish the Physiology of the Mind without it the diseases of the brain & mind will be to you ever unintelligible - let me recommend to you then Gent: the study of the mind.

Lecture

# Lecture 20th Dec. 5th.

Pleasure as derived from the senses & its proximate cause

Let me first premise Pain. pain is the natural state of man.

As absence of stimulus is death, so the absence of sensation is pain;

hence all nations have some way of keeping up sensation; some by

means of Opium Wine &c. In civilized life pleasure predomi=

=nates, in savage pain. A savage state is a state of misery. The

first sensations of a new born infant probably is pain produced

by the air causing an inflammation on the skin, else whence is

the redness & those cries. The sleepiness which follows crying

seems to be a Coma from indirect debility. Many pleasures

produce disease when carried to excess.

Pleasure of the Senses. 1st Touch. The grades

are 1st Commerce with the sexes 2d Kissing 3d Contract of the

skin hence the pleasure of squeezing a lovers hand. Pleasure

may be used for curing many diseases 4th Temperature of

the air. The Lamb the Calf the Colt &c all discover it

in their gambols. It is owing to neither moral nor intel=

=lectual

UNIVERSITY
OF
PENNSYLVANIA
LIBRARY

intellectual faculties. I myself have felt it. Dephlogisticated air is a source of great pleasure 5th Warm Bath. It is used in many places as a luxury. It assisted in smoothing the life of Dr Franklin. Nothing is more useful in old age than the warm bath. Life may be prolonged by the use of it. 6th Action of certain exercises of the brain as Swinging, Dancing Sailing Riding for Chase &c The Indians talk of a new species of joy. The joy of fear after a bloody victory. This pleasure arises from our having escaped the danger, perhaps the joy of the Chase is of this kind or the pleasure derived from the sound of the horn. Mr Blanchard spoke in raptures of the pleasure of sailing in a Ballon it quickened his pulse 4 strokes in a minute. I make no doubt but in time this exercise will be used as a cure in diseases of direct debility 7th The Operation of certain medicines & liquors on the body as Opium. Hence the pleasure & raptures which people speak of arising from pleasurable sensations after a dose of Opium. They have said they have felt as if they were in heaven. 2. Stramonium. 3. Tea 4 Wine 5 Ardent Spts. 6. Tobacco 7 Coffee &c

9th

8th the sudden relief from pain when extreme; hence the extravagant expressions of women after child birth 9 Certain soft bodies ap=plied to the skin as down &c 10 Certain titillations as rubbing the hand over an inflamed part. Looking after lice. I know a Lady who although she has not probably had a louse in her head for years will employ her servant in looking her head for hours together. Tickling is an Hermaphrodite pleasure and sleighing the same. There are pleasures depending upon Idiosyncrasy I know a Gentleman who feels a great pleasure in the act of tying up his arm to be bled. Another in the flowing of the blood 11th Rest from fatigue or labour. A cool evening after a hot day & moderate degrees of heat after exposure to cold. 12th The Action of all external impressions by the action of the mental faculties 13th Tickling. This as I mentioned before is an Her=maphrodite pleasure or sensation 14th The intermittent space be=tween the Sleeping and Waking states 15th The bodily pleasure of dying. It occurs frequently during the yellow Fever. Hence Pope "Oh the bliss of dying" & Mr. Wm Hunter in his last moments said "Oh that I had a pen & Ink & could write that I might

express

expres the pleasure I feel in dying" General Butler expressed this pleasure when he fell in the field of battle. The smiling coun=tenance that we observe in some dead people is I think an expression of the pleasure they felt in the separation of their soul and body.

Taste. Had our lives depended on reason for their support we should have died from negligence. These pleasures are of a re=lative nature. Hungar & Pleasure make it more agreeable. i. e. we can eat the grosest victuals when hungry. Tobacco that most loathsome of all weeds from habit becomes agreeable. Condiments are useful in exciting the papillo of the tongue to render taste more acute. Tis perhaps for this reason, the Rhinoceros always always stands behind a thorn bush when he eats and chews the twigs. Its pleasures are increased by the concentration of the senses. To enumerate all the substances which afford pleasure by the taste would fill volumes (vid my 1 Vol: Inq: & Obs:) In addition to that I think there are many new objects yet to be discovered.

Smelling. Every Hill Vale or Shore affords pleasure to this sense. pleasure of odors increased by moisture. Tis a most delightful

sensation

sensation. It bears some resemblance to the tones of a violin
There is something like bass in the smell of the Magnolia. The
Pink & Rose resemble the treble &c. They are highest in the morning
when the dew is on them. The Rose stands foremost in the scale.
Next the sweet scented shrub of S Carolina. Cultivation increa-
-ses the fragrance of plants though it diminishes their brilliancy.
The sense of smell is liable to perversion as well as other senses;
hence some are fond of the smell of Asafotida, the snuff of a candle
&c. In like manner the barbarity of savages is only a perverted
moral faculty.

Vision. Where shall I find language to express the pleasures
arising from this sense 1st Light as derived from the sun. Moon
light. It is at this hour so many fall in love 2d Colour. The
blue colour of the skies & the green colour of the earth are peculiarly
agreeable to us. Red, Orange & White afford pleasure. They are
like sounds related to each other. Tis by the colour we have
estimated the value of metals. Beauty of dress depends upon
an agreeable relation of its colours 3d There are certain figures
that

that give beauty. Round more pleasing than square. Man is the most beautiful of all the Creation. Next the Horse. A young Gentleman was so very handsome that a young lady the first time she ever saw him fainted. Art constructs such things as afford pleasure to the eye 4 Gentle motion. The nodding of the Forests. The Waving field of Corn. The gentle purling stream. They must be slow & hence the pleasure of viewing a country dance, & a minuet still more so owing to the slow movement & beauty of line; & hence "slow moving without step" 5th Height Distance & Magnitude so often united strike us with the idea of beautiful. A Lady on the top of mount Blanc[lo]re, was so astonished with its beauty that she stood a long time motionless. Height alone de-lights. Excessive pleasure like grief renders a person motionless in viewing objects; the Queen of Sheba's spirits died within her at viewing Solomons Temple. Who has not experienced pleasure at viewing the ascent of an Eagle Ballon &c. A Cloud depicted with various colours by the setting sun, & the Ocean reflecting the pale rays of the Moon are sources of infinite pleasure 6 Contrast

hence

hence the propriety of making a Garden as regular as possible in the Country; & in a City the reverse. The contrast which it affords in this manner is truely charming

Hearing. The Mothers voice at our coming into the world affords great pleasure. In every period of life we are delighted by Conversation Publick speakers delight perhaps more by the melody of their voice than their eloquence. Not only these but Vocal & Instrumental music are sources of immense pleasure. Count Ogitskie spent £2500 sterling a year in attending Hou=ses of Music. The feathered kind, Winds, certain Quadrupeds &c all do homage to man. Breezes over the lofty pines, a gentle shower of rain on the roof of a house, Streams gently flowing over pebbles all produce a delightful sensation. Such are the charms of Music the ancients supposed hell opened to its powers, & the Christians suppose it one of the employments in heaven. Good & Pleasure most predominate over pain & evil in our world. Evil arises not from God but the wickedness of man. We enjoy only one pleasure at a time. Thus Gent: have I

finished

hinted only at a few of the pleasures they way is open pursue it at your leisure.

## Lecture 21st Dec.r 16th.

Proximate Cause of Pleasure. I shall 1st Deliver a few propositions. 1st Motion is essential to pleasure 2d Pleasure consists in a certain definite degree of impressions & a certain re=gular order of the impressions & motions. To render this intel=ligible I must anticipate a little by giving the cause of pain. 1st Distention 2d Debility or relaxation 3d Mechanical stimuli or Che=mical stimuli. Pleasure consists in the harmony of the vibrations of the Nerves. Pain in too great or small a degree of them. They are nearly related - hence the Table of Socrates - they are two sisters. Does a great degree of distention produce pain - a less degree pro=duces pleasure. There are Idiosyncrasies in pain hence a Gen=tleman in Edinborough had a finger so extremely sensible that he could not bear it to be touched. A Gent: in this City shrinks with horror from the touch of a peach. Do Convulsions as Teta=

nus

Tetanus &c produce pain so in a moderate degree they produce pleasure. Hence the pleasure produced by convulsion in the ve=nereal gratification. What is it that makes the face of some so charming - it is from the reflection of the rays of light in an harmonious order on the nerves of the eye. Dr Haller says there is always an afflux of blood to the part where the pleasure is felt. This is sometimes the case as in the act of coction & but not always. The proximate cause of pleasure, then, is a moderate partial or general excitement in exact order - producing an harmo=nious & melodious effect on the organs of sensation. Of pain it is the reverse - pleasure may be produced by opposite causes - Hence gen=tle bloodletting & Opium pleasure is a mere quality. For the doctrine of the senses Vide Solomon - Weak impressions become strong & strong ones weak by repitition - Hence the reason why Tobacco Ardent Spts. &c become agreeable by repitition & custom. Their impressions descend gradually to the pleasurable point. Pleasure is lessoned by duration One stimulus always predominates over another Hence the death of Martyrs - in them the stimulus of hope of a heavenly world &=

ceds

exceeds the stimulus of the flames which surround them.
Final Cause. You all know they prompt us to eat drink
Sleep &c they invite us to view the works of our Creator & they
should lead us to eternal happiness. Pleasure of the senses is
limited - hence no pleasure can be carried so far as to satisfy.
Durable as our pleasures are they all have their alloy. No inge=
=nuity of man has been able to satisfy them completely. Pleasure and
Health are connected without the latter we have none of the for=
=mer.

Pleasures of the Mind. 1st Memory. In exerci=
=sing this faculty we live as it were our lives over again. By this
we view the battles of foreign nations by our fire sides & on our
beds - tis by this we distinguish & converse with our absent friends &c
2d Imagination. Creation is the business of this faculty, one
while it feeds upon glory another while it transports us to for=
=eign nations &c. In a Word it is by this sense we ride in
Ballons & build castles in the air. —
3d Understanding - it affords great pleasures they are of the

the most delicate kind. Pleasure of Taste belongs to this order. Taste is so exquisite sometimes as to produce fainting. Archimides after solving some difficult problem in the midst of a company cried out eureke eureke. Dr Whittenhouse fainted at the transit of Venus over the sun in the year 1769. Octavia fainted at hearing one of Virgils poems recited - it called to her mind the glory of her Son

"Hecce miserabile puer"
"Tu Marcellus eris"

A Will. Judge of the immense pleasures we derive from this source by the following fact. A Negro Slave in the state of Delaware was exposed to sale at a public vendue. A Gent: present was so pleased with his Countenance & behaviour that he purchased him & immediately gave him his liberty it had such an effect on him that he fainted away and was with the utmost difficulty brought to. Passions. It would re=quire a Volume to enumerate all the pleasures we derive from the passions. Love when pure creates a little Heaven on earth.

Lecture

# Lecture 22d Decr 8th

Moral Faculties. In the husbandman all the moral faculties are excited Let me observe Gent: that it would re-quire a pen made of a Quill plucked from the wing of an Angel to describe all the pleasures arising from this source with that sublimity they deserve. They are the highest pleasures we are capable of exercising. There is no energy of the mind but what is produced from stimuli from without. The fatigue of the faculties of the mind, proves their action on the brain. The pleasures of the mind act on the vascular nervous & glandular systems, Brain & Alimentary Canal. The pleasures arising from the recital of a tragedy are hemaphrodite- thus we find typhoid action thro' every part of the system. The exploits of the memory are extensive & afford great pleasure, but exquisite as the plea-sure is, it is scarcely to be compared to the understanding- the former like a draught of diffusible stimulus soon passes off while the latter may be compared to the durable. I never knew a positive, stubborn Man have a will of his own, they are

are a "governed ungovernable animal" this Gent: applies to medicine as well as phylosophy &c for instance, I know a Phy=sician who is governed by Cullens first lines; yet he is ungoven=able by reason. The pleasures that have been enumerated prove irefragably the preponderation of good over evil.

*The proximate Cause of the Pleasures of the Mind*

Gentle Distention of the Brain - Excess or deficiency is pain - Re=petition renders unnatural operations agreeable. Grief however strange it may seem becomes agreeable Disappointed Love pro=duces virtue. When our love is fixed on an ugly woman it is al=ways more durable. Those people who reason the eternal ~~death~~ sleep of Death are fools.

*Sleep.* It is to sensation & thought what rest is to motion; or darkness to light, it may be called the repose of sensation and thought. Those people who live without sleep are not in a health=ful state.

*Proximate Cause.* One effect of sleep is a tendency to death another a restorative - it occurs when the system is re=

duced

reduced to a point happily called by Dr Be n the sleeping point Dr Cullen calls it a state of collapse it is the same idea. Sleep is a tendency to life by producing an equilibrium of the ex=
=citement.

Remote Causes. They are divided as they induce sleep by reducing the excitement to the sleeping point or by raising it to the sleeping point. the former do it directly the latter in=
=directly. Of the former the 1st are the abstraction of certain stimuli 2d Certain evacuations as bloodletting purging &c 3d Cer=
=tain substances as Oil &c applied to the body & its surface 4th Cold 5th Venereal Gratifications 6 Grief Despair & Criminals generally sleep sound the night before execution after sentence is passed owing to the abstraction of Hope &c Of the Latter are 1 Labour this is the most general cause of sleep 2d Exercise of a moderate kind 3d Certain Aliments & drinks 4 Certain sounds, Hence the neighbours of the falls of the Nile cannot sleep when removed from them. I know a Watch maker in this City, who cannot sleep unless among the ticking of watches

5th A Moderate degree of heat and cold pediluvium is an in=
=stance of the former 6th Exercise of the Understanding 7 Rain
falling on the roof of a house. Thinking of some indifferent thing
or counting an hundred backwards often induce sleep. Dr Darwin
in his Zoonomia says if you with to prevent sleep the best way
is to think of some one who has injured you. Thinking of law
suits will also prevent it, for I am told it is a powerful stimu=
=lus 8 Light of a Candle, the fire light or the light of the
morning. I have often advised people who complained of sleep=
=less nights to set a lighted candle or lamp in their bed rooms
which had the desired effect 9 Walking 10 15 or 30 minutes
when a person inclines to be watchful induces a disposition
to sleep. The discharge of phlogisticated air from the lungs
is another cause of sleep also the croaking of frogs. They in=
=duce sleep by equalizing & reducing the excitement to the
sleeping point. They should act equally to have this effect

## Phenomina Attending Sleep.

it begins with
a prickling sensation in the Eyelids. Pain in the Limbs;

hence

hence children cry out with it Relaxation below the sleeping point - Intellects affected. Head totters first - sometimes it comes on sudden and then we start caused by the sudden abstraction of sensation and motion - it is attended with a diminution of sensibility & irritability. Hungar & Thirst are Chased away during sleep by the equalization of excitement. The secretions and excretions of the body are also diminished. The heat of the body is diminished one degree of Fahrenheit - passions and moral fa=
=culties at their lowest degree. Pulse slower & fuller - we may be said in this sense to become Indians when we sleep - it is also fuller owing to relaxation of the skin or the translation of strength from the muscles to the Arterial system, or the confi=
=ned heat of the bed clothes. In this case we may say the Ar=
=teries say to the other systems give us of your strength it is time you should repose. They are the Centinels of the body in the state of sleep. Perestaltic motion lessened during sleep Hence the suspension of Diarhoea. In sleep we perish in 12° of cold; but when awake life is supported untill the scale

is

is reduced to 40° of Fahrenheit. Children sleep more than middle aged people & these more than old people. Abortive children sleep more than others the system is weaker during sleep. Hence the Gout. Fevers &c almost always attack persons in the night in this case the Vascular system borrows too much or too little. For this reason also Invalids should never exercise before breakfast or early in the morning.

Duration. more than 8 hours duration is unhealthy. Wesley Whitefield & the late King of Prussia never slept more than 4 or 5 hours in the 24; people of much distinction seldom sleep more. 6 or 7 hours are sufficient for any person. The time is regulated by habit and association. Little sleepers may be said to live much longer than others. they employ their time in study which others do in sleep hence their superior knowledge. We wake more suddenly than we go to sleep. In the morning all our faculties & operations are as it were subject to the Laws of gravitation, the moral faculty occupies the highest portion - the passions are sunk to the bottom - hence we profit

more

more from the morning studies than the midnight lamp - some say consult the midnight pillow but I say consult the morning pillow. The strength of our bodies is less in the morning - at this time fear seizes us more forcibly. The Indians take the advantage of this & always attack at day light - to remedy our debility in the morning - Nature has filled the air with agreeable odours & the songs of birds. Some persons say they have passed whole nights without sleep. I am disposed to doubt it from many observations.

Dreams. they depend on irregular motion attended with a morbid degree of excitement in the brain which may be too strong or too weak according as the system tends to direct or indirect debil=ity. They differ from delirium. The imagination & Understanding may be entire during sleep the memory is very different. hence we dream of deceased friends without recollecting they are dead. The Moral Faculties may be said to sleep with us - else why do we dream of perpetrating deeds which in the waking state strike us with awe The Will acts with more force during sleep than at any other time Dr Darwin is wrong in supposing it not to act

act at all. Stimuli produce dreams hence we dream more in the morning from the gentle Stimulus of the morning twilight, a full bladder &c. A Methodist preacher cried out during sleep from a pin sticking into his back "Oh I know what St. Paul meant by a thorn in the flesh" this is an important question as it in-cludes the sleep of the soul. Labourers dream but little, some none & a Young Lady in this City told me she never dreamt in her life. Locke says the soul sleeps with the body. It has been answered to this that 1st Children do not recollect — 2d ——— to the first of these I answer that children before they are three years old never have thought — to the 2d that it does not militate against the first great cause. I would as soon believe that a fever always existed in the bloodvessels in health as to suppose that dreams constantly exist in a healthy state. I therefore agree with Locke that the soul sleeps with the body. Dreams are a morbid state of the System.

How blest are they that wake no more.
Not so if dreams infest the Grave. —

Somniamus

Somnambuli. There are many wonderful exploits recor=
=ded in them. there is a Young Man in Paris who in this situa=
tion wrote an elegant dissertation (Vid: Elegant extracts of Nat: History)
Haller tells us he composed verses in his sleep. Blacklock the celebra=
=ted Poet in Edinburgh lay down on his bed after dinner & fell
asleep: at tea time the family called him & he got up from his bed
went down stairs, talked with his usual good senses sang a song
drank tea with the Company & with his eyes open as usual. at
length he started up suddenly & declared he was ignorant of all
he had done. They remember not what they have done when awa=
kened but when in the same state recollect every thing that had
passed in the preceding fit. It is difficult to account for. There
is a case which leads to a clue of it in a letter from Dr. Lentwath
of Springfield to the Revd. Dr. Stiles - it was the case of a young
Gentleman who had regular fits of Mania apparently. When
seized with them he engaged in some business which he seemed
to be entirely ignorant of when he came out, & untill he relapsed
into another; when he regularly resumed it &c When in his fit
he

Talking in sleep is often connected with a waking state of the
sense of hearing, hence a conversation may be carried on with a
sleeping person. Persons who talk in their sleep, do not recollect
when they awake, what they have said. This is owing to that part
of the brain, which is the seat of Memory not having been exci
ted. Terrifying Dreams are frequently the forerunners of Disease.

he seemed to know nothing of his ordinary, & vice versa. They appear to have two distinct minds: may it not be owing to impressions made on other parts of the brain by disease & re-excited by the same stimulus. When dreams are true it is owing to ac=cidental coincidence. It has been said that when persons talk in their sleep they do not recollect. No actions of the somnambuli fatigue them this shews the preternatural excitement in the brain One more fact. Why do we dream of so little of persons most dear to us. We never dream of our sweethearts except at the begining or decline of our passions. It is owing to the excitement of those parts of the brain destined to imagination being worn down by constantly thinking the preceding day of the beloved object. they have no commu=nication with supernatural powers- though let me not close the channel thro which the supreme being may communicate va=rious suggestions. It is the business of the Physician to know what dreams are at present, not what they will in future tend to — Final Cause. To afford rest to our debilitated systems to pre=pare us for the actions of an approaching day. & according to the poet

Man was first directed in the choice of his food by divine Revelation- He was created a civilized being, degenerated into the Savage state from the loss of Religion & of the use of letters- Credat Judeus Apbela!

poet "Sweet Restorer". Having now Gent: finished the physiology of the human mind & I shall next proceed to the consideration of

## Chapter II

## Lecture 23d & 24th Decr. 9th

**Aliment.** This is of two kinds Animal & Vegetable. They are both the proper food of man. This I infer 1st from the form of the teeth 2d from the use of either species of food solely, for any length of time being followed by disease 3d from an injunction laid upon us both by the old & new testament. The proverb "slay & eat" is a divine one Let us not suppose there is a cruelty in killing Animals for the support of our lives; far from it 'Tis an act of benevolence; as it makes room for thousands to come forward and enjoy life which never would have existed had not their Ancestors been destroyed. It also prevents all the infirmities of old age which would prevent one from relieving another. There is no Animal whether Quadruped or Fowl, but what have some time or other furnished food for man. The insect snail, worm, & even viper, have all been held up as Articles of Luxury in some country or other;

&

II

Hare even at the present day. Sir Thos. More has written a Vol: on this subject. The Wholesomeness of food depends upon its solubility & stimulability. Food is more or less soluble 1st The Female is more digestible than the male & the castrated, than the uncastrated Animals hence Capons are preferred to Cocks, Steers to Bulls, Wethers to Rams & 2d Young less soluble, but more stim=ulating than old. Adults more so than either provided they do not exceed a certain age 3d The time & manner of preparing them for the Slaughter house. influence their solubility & stimula=bility. The excellence of fresh beef consists in its being kept to pasture with other feeding for two years before killing 4th the exer=cise they undergo; hence the practice of Bull Baiting. Wild fouls & Animals more soluble than tame. hence the various institutions to imitate it 5th the more fat it contains properly mixed with lean. 6th the time it has been kept before cooking influences its solubility. I know of no exception to this, only that pigs ducks & geese should be eaten immediately after they are killed because the oil they contain becomes rancid in a very short time.

Animals

9

Animals may be kept a long time in winter without putrifaction
There are three ways of accomplishing this 1st the most common
way is in a cool cellar 2° An Ice house 3° by immersion in cold
spring water - this last as it is equally effectual & most easily come
at is preferable. Meat by these means may be kept 10 or 12
days in July. It should be kept one foot under water & cooked
soon after taken out. It has been observed that a fork stuck in
meat kept in this way is always followed by a flow of blood.
Timber will likewise remain sound for many years under wa=
=ter 7 Tis not soluble & easily digested when well done & the man=
=ner in which they are killed. Dr Franklin tells us that those
animals that are killed by the Electric shock are most tender,
& on their being thoroughly masticated depends much their solu=
=bility. In fowls we may tell when putrifaction is about to take
place by the relaxation which takes place in the sphincter ani
which always contracts at death. The moon we are told has
great influence in disposing animal substances to putrefaction.
It has puzzled the brains of Philosophers to account for it.

May

May it not be owing to the light of the moon directing flies & other insects to deposit their eggs in it more than any direct influence of the Moon. They may be more succulent as Oysters.

Manner of using Animal Food. 1st in the form of Soups Black broth Cockluky-soup meagre Lodgepodge &c are all of this clasp. It is of Consequence to know the composition of every dish used in common diet in order to be able to judge of the probable cause of your patients complaint 2 Boiled this is less stimulating than roasted, Mutton Goose Duck best when cooked in this way 3d Roasted this is more stimulating & savory most proper for debilitated habits and old people 4th Broiled as beefstakes. The celebrated Pegg Mullen so famous for her method of preparing beefstakes in this City used to burn & constrict the outside by a sudden application of heat, thereby preserving its juices 5th Baked 6th In hashes or stew more nourishing than boiled 7th Frying 8th In pies 9th by means of hot vapour. The moderate use of any kind of diet that lies easy on the Stomach is wholesome A Noble=man whose physician was one day dining with him asked him

him if such & such articles which were on the table were whole=
=some his Dr said "does your lordship like them" yes "do they
agree with you" Yes then eat them said the Dr they are whole=
=some. There may be a deception in this rule because some arti=
=cles lie easy on the Stomach & their bad effects do not appear for
years after habit. This applies here as well as to every part of
the Animal Aconomy. Fish - Dr Haller supposes fish to be
the first food of man; as his humanity in a state of Innocence
must have led him to that animal which expired without a
groan 'tis less nourishing than Animal food. They should be
eaten immediately after taken this is practised in Holland. Oysters
are easiest digested when raw or only warmed through. We know
that Fish is done by their rising to the top of the water if boiled.
After this if they be left for any length of time they sink. Fish
have been supposed to have a considerable influence upon the
procreation of our species. This has arisen from observing Fish
Towns fullest of Children but the reason is this class of people
is most healthy. Fish should be eaten alone or with but little
other

other food by those who have weak stomachs. Lent is a wise in-
-stitution and should & should be adopted by every class of people,
1st as it reduces our aliment to vegetables alone in that season of
the year when we are most disposed to plethora & inflamatory dis-
-eases 2d It prevents us from eating land animals when they are least
wholesome i.e. at the Spring of the year.

*Of Vegetable Aliment.* This constitutes the food of the great-
-est part of mankind. On our first coming into the world our only
nourishment for a long time is milk. This is both Animal and
Vegetable & consists of first Cheese which is the Animal 2d Cream
which is the vegetable & 3d Whey which is the watery part. Eggs
are the next most natural food. Condiments are used with food
1st Salt— The passion for salt is instinctive children are fond of it.
Indians use wood-ashes instead of it. It promotes appetite & digest-
-ion which are its only uses 2d Vinegar is agreeable. Pickle is the
same only in a solid form. 3d Spices, as pepper, allspice, cloves
&c are proper for people in warm climates. Ketchup is a mixture
of mushroons & salt— they pall the appetite & retard digestion.

5th Mustard & Horsh radish; these when long used are apt to induce Dyspepsia

Methods of preserving Meat 1st By the heat of the sun. this method the Indians use 2d By cold. Fish may be preserved in this way- when to be used they should be thawed by immersion in cold water and used immediately 3d by Sugar & Molasses 4 By dry sand & flour these two last act only by excluding the air 5 Smoaking this is most effectual & universally adopted- Wood contains an alkali which is antiseptic to meat. Hams should be hung up by the large end because in this position they best favour the flowing out of the juices; which you all know is the cause of their putrefaction 6th By salt this to be effectual should be used in large quantities; small quantities hasten putrefaction 7 by cutting out the bones A Sea Captain first found this method to be useful by observing meat always to putrify next the bone first 8 By evacuating the vessels of their contents & injecting salt Brine. This was used by the late Dr Chovit when he was in the west Indies. Fat meat is more nourishing than lean; it

it it next to sugar in the scale of nourishing substances. To pre=
=serve hams in summer has long been a desideratum. An old
experienced philosophic farmer told me that the method which
he found to succeed best was to bury them deeply in straw cut fine-

Drinks- Water was the first drink of man, but every coun=
try has substituted something in its place. Beer Porter & a liquor
made from grain fermented by human saliva have all had their
places. Wine is the most agreeable. Are we thirsty nothing but
water can cool our parching tongues. Have we been intoxicated? no=
=thing but water can ease our disordered stomachs. Man is a crea=
=ture of habit & he is destined to live in every clime. It is neces=
=sary he should live on every kind of food. We see him in the
form of a Tartar placing his teeth in the jugular veins of a goat
& sucking its blood for a sustenance. Some Indians live solely on
fish - others on birds & beasts of prey. The persians live on dates &
other fruits & some sects in Constantinople live entirely on Cucum=
=bers in the summer months. The celebrated Spalanzani forced
Carniverous Animals to subsist on vegetables & Graniverous on

animal

animal food. All aliment is nourishing in proportion as it contains 1st Sugar 2d Oil 3. Mucilage. That aliment is nourishing in proportion to the sugar it contains may be known 1st from the small quantity of saccharine matter it takes to support a horse. I have been told by good authority that horses can subsist as long on 1lb of sugar as on 14 Quarts of oats in the West Indies 2d from the Negroes always growing fat from the sugar at those seasons 3d from pigs fattening fastest on saccharine matters. That Oil is nourishing may be observed 1st from Eastern Nations using so much of it with benefit 2d from labourers perfering pork to beef because a less quantity serves them. That Aliment is nourishing according to the mucilage it contains I infer. 1st from Indian Corn going twice as far as the same quantity of wheat, as it is of a ~~most~~ more mucilaginous quality.

*Time of Eating.* The Eagle eats but once a day the Horse is always eating. Which of there is the most suitable for man? I answer that of the Horse; because 1st Children who are not led by luxury, but follow nature eat always 3d In small quantities it is

is more digestible & passes easier through the pylorus 4th It promotes equable circulation of the blood & equable excitement but from the duties & customs of civilized life & society we are obliged to regulate our meals at stated periods; & the general form is three meals a day. We should rather multiply than diminish the number. The evening the best time to eat large meals, because rest promotes digestion. The Athenians who followed nature exactly; ate their heartiest meals in the evening. We should imitate them. The evening is devoted to society. I think we ought to eat little & often. What quantity is proper in a day? This differs in different days & constitutions. Children eat more proportionally to their size than grown persons, & old people than middle aged. Allowances should also be made for the quality. Labourers make use of more food in winter than summer; but less drink 3 ℔s of common food is said to be sufficient for a grown person a day, but few require more than 4 or 5 ℔s Habit would make that sufficient and it is habit only that makes more necessary. In fevers a small quantity will support the system. In this state Life is supported by

by the stemulus of pain & fever. Should we take our food hot or cold? it is peculiar to the human species to eat their food hot or warm. That it is natural appears from the Indians using it hot. Is it proper to drink during meals? I answer no 1st because it palls our appetite 2d It washes the food out of the pylorus before it is properly digested - tis more temperate not to drink till after meals. In Dyspepsia little or no drink should be allowed. I would infer that drinking healths during meals are unkindly to health 1st because a person is continually disturbed 2d It banishes silence so necessary while eating. I would sooner go without my dinner than contend over a Goose with a carving knife - it is unfriendly to health; because the Carver to avoid the singularity of sitting long after the rest of the company are done is obliged to swallow his victuals before it is sufficiently masticated. Putrid meat does not generate animalculi of itself if you cover meat with muslin it will all come to nothing without even an insect of any kind whatever. Soups always make the first dish of every temperate family. They act as dampers to the appetite to prevent the eating of

of too much animal food. Fish & Flesh should never be eaten together. You will often hear Invalids & Convalescents complain of fish disagreeing with them; but they never do unless they have eaten flesh either before or after. Stomachs debilitated by bilious diseases are fond of salted meat. Convalescent state from Cholera Morbus Gout &c require salted meats Tea & Coffee of themselves do not contain a particle of nourishment. Coffee acts as a stimulant on the brain hence Vertigo. Tea acts by producing Tremors. I would advise you Gent: when you are called to see patients who require you to sit up with them to drink 2 or 3 Cups of Coffee - you cannot concieve hoco much more wakeful it will make you.

Wines - sweet wines are the most nourishing owing to the quantity of sugar they must contain. Red wines the least wholesome of any. Cyder is not wholesome - Used by persons who lead sedentary lives, it is apt to produce Gout, Rheumatism &c used by labourers it is innocent

Spirituous Liquors. It would require a thousand tongues armed

armed with the eloquence of a Cicero to enumerate in proper colours the catalogue of diseases they have entailed upon mankind.

## Lecture 25th Decr. 13th.

Upon what does appetite depend? This Boerhaave supposes to depend on 1st the attrition of the coats of the Stomach 2d The action of the Gastric juice - 3d the Bile - Vesalius. I believe neither of them but I believe that a common healthy appetite depends upon a relaxation of the coats of the Stomach to what I shall call the hungry point. If we wait too long for a meal we lose our appetite. Why? because the system falls below the hungry point. This relax=ation may be morbid. Why you will ask is this relaxation necessary ask your Creator. when the stomach is empty it is debilitated & more liable to be acted upon by moderate stimuli. Hunger in a degree ruffles the temper. It sometimes disorders the moral faculty - Vide Vol: 2d of my Eng: & Obs: Hunger has been said to break through stone walls it has done more, it has forced mothers to kill their own children - nay more - compelled people to eat their own

flesh

flesh. Hungar increases the strength in this way, it is always attended with an increased excitability, upon which the stimulus of the desire of life acts with encreased force. That it is a certain relaxation which produces appetite I infer 1st from the effect of certain passions; as Grief & Joy the former by reducing the latter by raising our systems beyond the hungry point deprives us of our appetites 2d The effects of pure air in producing appetite. The gastric juice by becoming morbid may create an Artificial appetite like ardent Spirits &c. There is a great accumulation of excitability after fasting long - Hence Mr—— died after eating one small loaf of bread in this state of the System. Hungar may be suspended by Opium Tobacco & many other stimuli may even the smell of hot victuals. All act by raising the excitement above the hungry point: Hence Gent: we derive an important hint in the treatment of Convalescents. In Dyspepsia we should not let our patients even smell their food. It should be given in small quantities & often. A Horse fattens fastest by small meals frequently repeated.

Thirst

Thirst. Where is the situation of thirst? & what are its causes?
It is situated in the throat and fauces which is proved by its being allayed by only washing the mouth with cold water. It is occasioned 1st by acrimonious matters stimulating the mouth & throat 2° A relaxation of these parts by artificial means, as fear &c & by relaxing the vessels to a certain degree, which I call the thirsty point hence in the onset of a battle soldiers complain greatly of thirst 3 Pain 4 Opium Digitalis &c. they produce it only by indu=cing indirect debility & bringing the system to the thirsty point. Food is first divided by the teeth & masticated moisened by Saliva. The tongue keeps it between the teeth & afterwards assists in propelling it into the Stomach where it undergoes the process of digestion.
How is digestion performed? It has been supposed 1st by Me=chanical means by Boerhaave & Pitcairne by way of trituration but is very absurd 2° by Chemical means. Reject the Idea of putrefaction it rather retards than assists the process. Heat So=lution & Fermentation are alone necessary 1st Heat is ne=cessary to the process as the other two will not act without it. I

cannot

cannot agree with Mr Hunter & Spalanzani that digestion goes on after death. The appearances which takes place in the stomach immediately after death & which are ascribed to the active power of the Gastric juice are thought to be a proof of this. It is more probable that they are owing to an inflamation & subsequent mortification in these parts previously to death. The Venereal Virus too is said to corrode the bones - tis not so. It produces inflammation near the bones & exfoliation takes place of course, which would be the consequence of inflammation from any other cause. In dying persons the excitability retreats last to the stomach & bowels. hence the occasion of the vomiting & diarrhoa which occurs frequently at the close of life. It sometimes takes refuge in the throat hence the thirst before death this Dr Fothergill complained of. These parts may have most life and preserving it longest, we conclude to me most liable to inflam=mation & Mortification.

**Solution.** The Saliva & Gastric juice have strong disol=ving powers. They are more powerful in Children & old people

becaure

because the want of teeth prevents them from masticating their food properly. Those animals which have gizzards have least occas-sion for it but is absolutely necessary in the human body. The gastric juice acts best upon meat well done and masticated. This Gent: requires your strict attention.

Fermentation. I know this has been rejected; but I know there are fashions in medicine as well as in other sciences. By fer-mentation I mean that process by which heterogeneous mat-ters are changed into bodies of a homogeneous nature. Bodies must undergo the Vinous Acetous & putrifactive processes to render fermentation regular. the two last certainly takes place in digestion. There are four circumstances necessary to carry on the fermentative process 1st Heat 2d Moisture 3d Air 4 Rest. Moisture when immoderate retards digestion. let us see how far our principles will apply 1st Our food consists of substan-ces that would undergo fermentation out of the body. In the stomach they have 2d Heat 3d Moisture from the common heat of the animal & gastric juice. 4 Air from our food that

that is swallowed in large quantities 5th Moderate motion; any ex-
-ercise greater than walking as riding &c retards digestion if used im-
-mediately after a meal 6 Saliva acts on the food as a ferment.
That it is essential to digestion I infer 1st From the quantity secreted
in the day about 12 ℔s 2d from disease following a waste of it—
Hence we find smokers & chewers of Tobacco subject to Dyspepsia
3 From experiments made by myself. I took two phials in both I
put a certain quantity of the same meat; the one I moistened with
saliva the other with water. In a few hours the first began to fer-
-ment & in a short time became putrid; but the other remained
sound for 20 hours Note Both of these phials were kept during the
experiment in a sand bed which by a Thermometer was made to cor-
-respond exactly with the heat of the body. This Theory which you
have heard was the result of experiments made not on Eagles,
Crows, Dogs, Cats &c but on my own stomach, while a student
at Edinburough. Digestion ceases when an acrid is evolved
from the Aliment. There is but one thing wanting to establish
my theory which is the contents of the stomach yeilding to dis-
-tillation

distillation a vinous spirit. This Gent: have I finished my theory of digestion. I shall not yeild to Dr Spalanzani D Stee=
=phens Dr Gofs &c untill they have taken as many Emetics to es=
=tablish their theory as I have done.

Phonomina attending Digestion 1st a Fever - it does not necessarily follow a meal it enables us to bear cold 2d Disposition to sleep occasioned by an advance towards indirect debility from the stimulies of the food - removed by Snuff, Segars, Wine &c not necessarily connected with it; therefore when a person calls for them after a meal it is a sign he has eaten too much. 3d Mental fa=
=culties are sometemes affected 4 Disposition to rest not necessa=
=rily connected with it. I am so satisfied that eating little & often is natural that I never perscribe for a chronic disease without enjoining my patient to eat little at a time and often. Apoplexy sometimes follows full meals. Digestion is retarded by Grief Fear & Shame. Is there not an afflux of the Electroid fluid to the stomach by means of the passions to assist the fermentative proces of digest=
=ion? I think there is. Bile is not one of the secretions 'tis one of the

the excretions as I hope to prove hereafter. It serves two purposes 1st it destroys the acidity of the chyle 2d Precipitates the Foeces. The motion of the chyle is promoted 1st by the peristaltic motion of the intestines 2d by the action of the Diaphragm. Chyle being formed by the process of digestion, is absorbed by the lacteals of the Intestines & conveyed into the sanguiferous system at the left subclavian vein & mixes with the mass of blood.

## Lecture 26th Decr 14th

Of the Blood. The blood as it circulates through the vessels appears to be a homogeneous fluid; but from observation we know it to consist of different parts 1st Halitus this we discover by the eye & by the blood losing its weight after standing some time it is nothing more than the thinner parts of the blood passing off by evaporation. The quantity differs as circumstances differ - as the application of heat & the size of the surface of the vessels into which the blood is recieved. It appears to be a portion of serum 2d Craſsamentum which is divided into 1 Coagulable Lymph 2d Red

Globules

Globules. The former of these seem to resemble the white of an egg in many of its properties; it is designed to serve the same pur=pose. A great quantity of it affords no Criterion by which we can judge of the presence of inflamatory diathesis as has been supposed for blood flowing into a small cylindrical vessel, from a large ori=fice increases the quantity of coagulable Lymph 2$^{d}$ Heat 3$^{d}$ the ma=terials of which the vessel is composed which recieves the blood, va=ries the quantity of Coagulum. An earthen one increases it. I for=merly gave you the grades of the blood from the highest to the lowest degree of inflamation. I shall now barely mention them. (vid 4 Vol: my Mg:) appearances of the blood are but little to be attended to. The buffy coat which shews a mild degree of inflam=mation may be occasioned 1$^{st}$ by great exercise 2$^{d}$ Pregnancy af=ter the third month 3$^{d}$ Spring season 4 Ligatures tied on the arm 5 Gout Apoplexy &c it is formed by the coagulable lymph. The Latter or Red Globules. Leuenhock supposed each globule con=sisted of six lesser ones but this we altogether reject. M$^{r}$ Hunter supposes they are flat like an English shelling & are neither

Globular

Globalar nor Lenticular. Why do they continue so long seperate from the other parts of the blood? Because they are not miscible with them. They have been supposed to be of an oily nature, truely they are inflammable, but this is not a proof of their being oily. The Coagulable Lymph is more inflammable than they, yet who has supposed it to be of an oily nature. On what does this colour depend? Dr Senaik says several united form a colour when one would not if seperated & that the difference of colour in Arterial & Venous blood depends on its undergoing a more complete Agitation in one of the systems than the other hence from much Agitation in the Arteries it is more fluid than in the veins Concretion renders the blood redder hence the dark red at the bottom of the bowl Neutral salts by increasing the concretion of the blood increases the colour. But it has been left for the honour of chemistry to discover the true cause of the colour of the blood. It teaches us that our Atmosphere is not a homogenious fluid that dephlogisticated air is the only pure one; & even this is mixed with Caloric. This is the pabulum vitæ this gives the

red

red colour to the blood. This I infer from its effects on other sub-
stances Nitre changes meat to a red colour by imparting to it
its pure air &c What is their use? to promote the elongation of
different parts of the body to preserve the bloods fluidity.

3d Serum. This appears to be water with a salt dissolved in
it of the Ammoniacal kind. What proportion do these different
parts of the blood bear to each other? This if known would be of
no advantage to us. It is difficult to ascertain & is different in
different constitutions. Do any other substances enter into the com-
position of the blood? Does chyle form a part of the composition?
Milk is certainly prepared immediately from the blood but it
has never yet been found in it except in a diseased person. Is
there any bil in it? no. Is their any air? Dr. Morris by freez-
ing blood obtained air It cannot be present in an elastic
state; yet I am disposed to think it may in a semielastic one.
Some Symptoms in Fever as flatulency &c confirm the opinion
One more question. Is the blood alive? i.e. does it possess sen-
sibility or contractility. Mr Hunter thinks it does. I object to
it

it. I have often wished and endeavoured to believe it, because it would afford an extensive surface for the action of stimuli in the support of Animal life agreeing with my theory; but as the Indians say "it wont believe for me". The blood is al=-together passive in supporting life. The appearances depend on the action of stimuli upon it. Tis a melancholy truth that Mr Hunter would never give up any of his adopted opinions till he gave up the ghost, however slender their foun=-dation - it was a loss to medicine.

## Lecture 27th Decr 15th. —

Lymphatics or Absorbent System. You need not expect a detail on this subject - it would be useless. I shall on=-ly collect such facts as are conclusively true. The absorbent system consists of Lymphatics & Lacteals - they are different on=-ly in the different fluids they contain. Lymphatics are a system of vessels arising from the surface of the body proceed=-ing thro' glands 1st they possess coats similar to those of the

bloodvessels

Bloodvessels they have a muscular coat. Pain inflammation &c plainly shewing they have a Nervous one 2d they have valves 3d They are endowed not only with Nerves but Arteries & Veins 4th They have mouths which some compare to those of Ani=mals because they imbibe not only soft substances but eat bones 5 Monroe supposes them to be convolutions of vessels connected by a cellular membrane.

Lymph is a secreted fluid not an exudation (see Hewson) There is found in diseases of the Chest an Exudation resembling buff. Hewson supposes & I think justly too that it is owing to too much tone in the vessels. How is it taken up from the In=testines? by its own Stimulus exerted on the mouths of the ves=sels. How is it forwarded to the Thoracic duct= By 1st the Pul=sation of contiguous Arteries 2d The pressure of Muscles 3d its specific stimulus on the vessels. Do they exist in every part of the body? Yes except in the brain; & for several forcible rea=sons I am disposed to think they exist there. What becomes of the water in the Brain in Hydrocephalus Internus if not

absorbed

absorbed & how absorbed unless Lymphatics exist there &c
2° The Veins in no part have been found to absorb fluids of
any kind. They absorb solids as well as fluids. The Thymus
Gland has been totally absorbed. Schirrous Tumours have dis=
=appeared. The cavity of the thigh bone in children is small
but in adults become large - it must be taken up by absor=
=bents & replaced by secreting arteries. Hence it appears that
the Lymphatics & Arteries perform two opposite offices in the
human body - the one adds the other diminishes - the one secretes
the other absorbs. Health consists in an equable action of these
two systems of vessels Lymphatics are excited into action by 1st
Distention, as in the bladder breasts &c 2d Pressure. D. Monro
mentions a case where the sternum was entirely absorbed by
the pressure of an Aneurism against it. Sores on the buttocks in
lingering diseases are owing to pressure 3d Friction as in the
cure of the dropsy. This should be used upwards because we
follow the natural course of the fluids. In the morning only
because they are not in a state of distention. A patient in this
city

City was cured by friction alone of an ascites – he employed a man to wait on him daily to rub him 4th Vomiting (see Mr Cruikshanks letter to Mr Clark) 12 Grs of Tart: Emet: taken in one of the London Hospitals by accident, for a dose of paregoric, by the excessive vomiting it produced effectually cured the patient of his dropsy The matter of a Bubo, which a surgeon had poulticed & thought nearly fit to open was absorbed from having taken thro' mistake an immoderate emetic 5ii the weigh more after the operation of a purge than before it the Lymphatics being brought by it into action, absorb a large quantity of moisture from the atmosphere 6 Electricity 7 Passions &c. For the effects of these on the lymphatics I refer you to my obs: on dropsy Lymphatics answer important purposes in the Animal body they act the part of scavingers in large cities they were discovered little more than a Century ago do not therefore despair Gent: but that other hidden circumstances will be discovered relating to them; perhaps what little light I have thrown on them will enable some of you to make important discoveries

Secretions

Secretions. Here Gent: I am disposed to make a pause, because I know little more concerning secretion than when I was a Student. I refer you to Anatomy for a description of the glands. The liver is a secreting duct rather than a gland. Glands are vas=
=cular. Fat is not a secretion. I have lifted up the curtain of this subject Gent: the scene I make no doubt will be fully demonstra=
=ted in a future day. Dies docebat. The secretions are formed from the Blood; but in what manner is to be the subject of the present lecture. Some suppose that the figure of the vessels disposes them to part with some & retain other parts & that the secretions ex=
=ist originally in the blood 2d by fermentation carried on in the glands. Glands are like Closets in a well furnished house which contain food for its Tenants. They belong to the Lymphatick Ar=
=terial & probably to the nervous system. The different states of the mind effect the secretions making them thinner or thicker. The secretions are 1 Lymph this is coagulable 2d Saliva this con=
=tains an ammoniacal salt 12 Dg of it are secreted in the 24 hours. It is stronger in old people than in young for reasons formerly given

given 3ª Gastric juice, this posseses also an Ammoniacal salt
the acrimony of this increases with age to make up for the want
of Mastication 4 Pancreatic Juice. It is of the same use as the
gastric juice 5 Mucous to obviate the irritation of fricton from so=
=lid substances in different parts of the body and from the action
of air 6 Synovial Liquor. This is secreted most plentifully in
the night; hence we are tallest in the morning 7th Urine - it con=
=tains earth, salt & oils. Heat lessens & cold increases this secre=
=tion by stopping the pores of the skin & determining the perspi=
=rable matter to the kidnies. It has been vomited up by the Sto=
=mach (see Dr Senters letter in the Trans: of Physicians of Philadelp.)
Passions affect this secretion. A Painter in this City told me
that when he was engaged in a very difficult likeness he was
oftenest interrupted with a desire to pass Urine. Studious men are
often disturbed with this desire Kittenhouse furnished an instance
of this 8 Semen, this is supposed to be absorbed at puberty
to occasion the change that takes place in us at that period.
But girls experience the same change & they have no semen to
absorb

absorb. Is it not rather the effect of a change. In old age it is acrimonious; hence the pain they have along the urethra in venereal connections. Mr Hunter found upon taste that it was acrid. It becomes thick by stagnation, the thinner parts being absorbed q^t Milk - this is secreted from the Chyle; it is to chyle what serum is to coagulable lymph - or urine to semen It is a kind of animal emulsion - containing sugar, mucilage, oil and water. If substances be reckoned nourishing in proportion to the quantity of sugar they contain this deserves to be ranked among the foremost of that class. Passions affect this secretion; A Child was known to have convulsions from sucking a woman in a fit of anger; It does not appear to be a vehicle of contagion because a child will not contract a disease however contagious by sucking unless there be an ulcer or excoriation on the mouth.

## Lecture 28th Dec^r 16^th

## Of the Excretions.

There are 1st the Fœces 2 Bile 3° Perspiration. And 1st the Fœces - they are derived from the Aliment & precip-

precipitated therefrom by the bile. They putrify as they pass thro' the alimentary canal. Their discharge is promoted by their weight & acri=mony stimulating the rectum. They yeild by a Chemical analysis an alkali & an oil. 2° Bile. This I once thought a secretion but from reading D^r M^c Clurgs treatise on the bile I am with him satisfied that it is an excretion. To the septic tendency of the Bile is added the filth taken up by the absorbents from all parts of the body. Bile prevents putrefaction hence its excretion is greater in warm than cold climates, & in warm than cold weather. Its bitterness proves it to be an antiseptic. That the liver is not a se=-cretory organ may be inferred from the termination of its excretory ducts in some animals. Its termination in the scuttle fish is near the anus. Though in some instances it appears to be a se=-cretion yet in many more it is evidently an excretion. I formerly said we know not the use of the pancreatic juice - may it not act as a diluent to the bile when it becomes acrimonious. How this fluid which constantly tends to putrefaction should pre=-vent it seems strange but it has its analogies. Nitre the

offspring

offspring of putrefaction prevents it in meat for which reason it is used. Also the offspring also of putrefaction having its origin from stagnant pools of water, secures whole families from an at=
=tack of the intermitting or bilious fever by absorbing the noxious effluvia & discharging pure air. In the moral world we have also evil curing evil. I compare the liver to a manufactory of Sal: Ammon: In this instance the laboratory of nature exceeds that of art in perfection. The natural colour of the bile is yellow tho' from the presence of an acid it is sometimes green. It promotes the peristaltic motion of the Intestines; for in jaundice when the bowels are deprived of their stimulus, then costiveness. It disco=
=vers when mixed a Yellow colour as in jaundice a green as in Chlorosis &c. It may seem difficult to account for the biles circu=
=lating in the blood & not mixing with it. But the difficulty vanishes when we reflect that chyle has been found in the blood=
=vessels in a state of complete seperation. The Yellowness of the skin from what has been said does not appear to be the consequence of putrefaction. A preternatural quantity of bile is

is produced by 1st Heat 2 Gout 3 Exercise 4 Marsh effluvia
This acts as a peculiar stimulus to the liver 5 Passions of the
mind particularly anger. hence the term choloric dioposition. A
Gentleman recieved an insult in a friends house where he could
not with propriety resent it but which irritated him very much
the consequence was he went out of doors & discharged his revenge
by vomiting a large quantity of bile. Horace "Bile ------ jecur
Hydrogenous gas has a specific action on the liver; hence the uni-
-versal presence of bile in those diseases occasioned by the exhal-
ation from putrid vegetables as above, which is chiefly this gas.
Bile yeilds by chemical analysis, oil, water, & ammoniacal salt.
Its saponaceous quality is altogether hypothetical - 3d Perspiration.
How do we discover that such an excretion exists 1st by Washing
the arm & wiping it dry & then putting it in a cylindrical glass
vessel, the perspirable matter will be found condensed in large
drops, adhering to the sides of the vessel. Sweat is only an in-
-creased insensible perspiration. 2d finely polished substances &
glasses held near the skin. It has been said that it has been
seen

seen issuing from the pores of the skin in vaporous streams to the distance of two or three inches. It must be a truely beau=tiful sight; It is derived from the extremities of the arteries only. What is its nature - It contains 1st Water 2d Ammoniacal salt 3 Septutic or phlogisticated air - which is proven from the sameness of the air discharged from the lungs & from its extin=guishing a candle if held under the bed clothes where a per=son has for some time been lying 4th a certain fotid odor. this is essential to perspiration - tis different in different countries ages & colours. Dogs can trace their masters by the peculiar smell of this perspirable matter thro' a thousand other footsteps Le Cat tells us of a monk who could tell a virgin from a mar=ried woman by her peculiar perspiration. By this savages can distinguish their respective nations. A Jew is known by his pe=culiar smell. Animal food renders it fotid; hence the Bramins who live wholly on vegetable food cannot bear the smell of an European. In Greenland the inhabitants live very much on Whales Oil on account of which their stench is intollerable. There are no

such

Women are more disposed to become fat than men from their bloodvessels being weaker - Great sleepers are fat because the excretions are diminished in them - Bleeding in health produces occasions persons to grow fat by producing debility in the bloodvessels - This is not a consequence to Bleeding in disease because it then only reduces the bloodvessels to a state of healthy excitement -

The discharge by perspiration is less in sleep, than in the waking state A man discharges more perspirable matter, in 9 hours in bed provided he be awake, than in 15 hours out of bed - hence the impropriety of allowing debilitated persons to keep their beds - & the propriety of confining patients to bed in the forming state of Fevers -

Diseases of the Kidneys more frequent in cold than in warm weather from the greater labours which they undergo in the former -

such glands as the sebacious. Is sweat discharged from a se-
=perate set of vessels? I answer no. It is owing to a relaxation
of the extremities of the Arteries. If great relaxation takes place,
red globules are sometimes effused - as in some fevers - What quan-
=tity is secreted in a day. In a healthy person, where a moderate
quantity of Aliment is taken 33 ℔ are often discharged sometimes
only 15℔ in 24 hours. There is more discharged by the skin than
by the Urine & stool; & more in the sleeping than the waking state
Aliment, Drink, Motion, Rest, The Passions, Gratification of
the Venereal appetite &c influence the quantity of the perspirable
matter very much. There is a constant harmony between these
vessels, the Kidnies & Bowels. Cold checks the perspiration and
throws it upon the kidnies; hence the increase of Urine in
cold weather - Debility increases perspiration. An Abstraction
of perspiration cannot produce disease, without a state of
debility existing in the body.

Of Nutrition. There are two Theories 1st that the body is
nourished by the nerves 2d by the Arteries. The former was

Dr

Dr Cullens opinion; I once taught and believed it. I was led to it by an observation of the Dr. which has since been proved to be false. It was that the Brain & Nerves was evolved prior to the heart & arteries. I now forsake this opinion for that more probable one by the arteries according to Dr. Monro. The heart & brain are not the fountain of life. I agree with Dr Valli in calling the brain the termination of the nerves & not their origin. Tis on the Arteries that stimuli leave their last action & exert their first impulse. They are the videts of the system. Haller calls them the "primum moriens et ultimum moriens". That nutrition is not afforded by the nerves I infer 1st from the disposition between the Brain & heart of different Animals; as the Ox. Their brain is small 2d Dr Monro tells us that monsters which require a great part of their brain are well nourished 3d Those parts which have few nerves are as well nourished as those which have three times their number 4th Dr Monro divided the sciatic nerve of a frog; yet the parts between were as well nourished for several days after as before

before the division & Madder when taken in will colour and nourish the bones; now this we know is not conveyed by the nerves & the kinds of matter so various- 7th ——

But from this I would not wish to infer that the body is nourished entirely by the Arteries, 'tis only to shew their im=portance. Life seems to be supported in the following man=ner viz 1st Blood acts on the Arteries 2d Arteries on the Nerves & Brain 3d The Brain reflects its action on the Nerves Heart & Arteries 4th All act reciprocally. If the secretion of all the finer matters be carried on by the arteries why not the nou=rishment of the body. Tis to be lamented as a misfortune in the science of medicine that the Arterial System has been so much neglected. Dr Boerhaave overlooked it in his ~~unfor~~=fortunate attachment to the fluids. Dr Cullen & Dr Brown seemed so absorbed with the nervous system as to ap=pear to have forgotten that such a system as the sang=uiferous existed. —

# Chapt^r IIII Lecture 29. Dec^r. 19^th. —

## Peculiarities of the Male & Female Body & Mind.

Hitherto Gent: we have confined ourselves to what is common to both sexes we now come to treat of the peculiarities of each & first of the Female Sex. A Physician ought to p^re^scribe only for - - who does not understand the peculiarities of both sexes. They are general or local - 1^st General - 1 Women are less & acquire their growth quicker than men. 2^d Their bones are less compact more soft & yeilding. Hence the bone of a female skeleton may be known from the looseness of its texture &c^a - 3^d Their Arteries posess more contractility than mens 4^th Nerves more irritable 5 Brain more susceptible of impression. 2^d Local 1 Pelvis wider than in men - hence they can retain their urine longer - 2^d In the Pelvis are the Uterus and other internal parts of generation peculiar to the female - 3^d The external organs of generation differ from those of men. 4^th A Periodical discharge of blood from the Uterus 5 Breasts more prominent & discharge a milky fluid 6^th They move

the

the thorax more & Abdomen less in respiration than men as formerly mentioned wisely intended to favour gestation 7 Voice more shrill & soft than mens or males. I cannot subscribe to the opinion that their minds are the same as the males. Their minds are less comprehensive than mens. 1 Understanding less vigorous 2d Imagination inferior; but fancy superior. Memory exceeds mens for names & Words, but not for abstruse ideas 4 Taste superior best judges of dress more polite hence the advantages of men keeping their company 5 their moral faculties more acute but more circumscribed. they have a greater sense of the Deity. hence they are in all countries most devout. They possess more humanity & Charity, but less benevolence. Their conscience countenances less sensible, but this may be owing to their being less accustomed to guiet 6 they have less veracity. 7th they are more communicative of secrets; but other peoples Gent: not their own. 'tis the reverse with men.

Operations of the Mind. They have quicker perception; but their reasoning powers & judgment are weaker. They have more courage fortitude but less fortitude, they are more disposed to so-
cieties

society, they are less apt to forgive an injury. Their passion for the venereal appetite less. They have more modesty by nature. There is no girl fond of riding a stick; nor boy of playing with a doll. Their minds & bodies are originally different the celebrated Wolstincraft is hypothetically absurd. She asserts that the dif=ference lies entirely in education. Tis necessary to social as well as to domestic happiness that this inferiority should exist. My opinion is supported not only by reason & observation but by divine revelation. Do parents love children more than children their parents; & does God love man more than man his Creator. Let not the little Champian of the Female World suppose by this I have an aversion to the sex - or that my love for them is di=minished by age - No - far - far be it from me. No person I believe has more reason to love the sex than I. Tis Reason, Observation & Common sense that command me to say what I have said.

Catamenia. 1st They are confined to the female sex of the hu=man species the Monkey perhaps excepted 2d The time of ap=pearance is different - ages - Climates - & States of Society. It gener=ally

=ally makes its appearance between the 14th and 16th years. I know two ladies of one family who menstruated under 7 years of age. They appear soonest in Females of high life. At this time the breasts swell; the eyes have a peculiar brilliancy. the voice becomes more musical the venereal appetite makes its appearance &c&c. The time of their cessation is between the 45 & 50th years of age. But there are excep=tions to this. I know a woman in this City who menstruated till she was above 100 years old. The menses return sometimes af=ter having been absent for 20 or 30 years. An instance of this kind occurred in the Hospital some time ago. When this is the case it is an effort of the system to renew itself. It has its analo=gies in other parts of the body. There are instances of people ha=ving complete sets of teeth after being absent for many years. I saw an example of this in Edinburgh. The senses too have been known to return after a long absence of them. The hearing has been renewed after a long absence. It was in this manner the people lived in the Antidiluvian age I suppose, the system renew=ing itself every 80 or 100 years. In this respect there is an analogy

between

between the animal and vegetable worlds. Trees and other vegetables renew themselves every year. The quantity discharged at each menstruation is from 3 to 5 Oz.s & the duration from 2 to 4 days. It has no morbid qualities as was supposed; it returns once every lunar month. Recollect Gent: the quantity discharged at a time it would not do to trust the cure of an inflammatory fever to it. Its presence will often be urged as an objection to Bloodletting 'tis none at all. But when present in disease calls more loudly for the lancet - it ceases sooner in the laborious than indolent women. It generally ceases during pregnancy & suckling. They appear about the 11th month after parturition; which is a signal for them to begin the work of procreation again. When they do appear during pregnancy they come from the Vagina not the Uterus. In enquiring into the causes 3 Questions naturally occur 1st From what causes do they first originate 2d Why monthly 3d What their use. 1 Dr Brown says they are owing to the stimulus of the venereal appetite. This Theory is as foreign to truth as it is to delicacy. For it has come on in some women who has never felt the venereal glow

2d

2d Some ascribe it to a ferment - tis not true 3o Others that the blood is collected in a sinus in the Uterus during the month & then discharged. No such sinus about the Uterus have been discovered by any Anatomist, they are only Bloodvessels enlarged by the distention of the Uterus. Almost all Physicians agree in ascribing it to a Plethora except Dr Brown. This may be either general or local. That it arises from plethora I infer 1st from the laxity of the vessels at the time 2d from its flowing in cases of suppression from the lungs, Legs tips of the fingers. Gums &c. I know of a Lady who during a suppression of her Menses had a discharge of 3 or 4 Oz of blood from a sore on her leg at monthly periods; punctually corresponding with the periods of the monthly evacuations. 3d From the effect of certain diseases in stopping them by debilitating the body 4th From women being more subject to diseases of an inflammatory type than men 5th From the symptoms which precede menstruation, being such as attend congestion & plethora in other diseases. In the time of menstruation the plethora is transferred from the other parts of the body to the

Uterus

Uterus 'Tis an Hemoptysis, if I may be allowed the expression of the Uter=
=us 'tis discharged from the arteries alone. The veins in the Uterus
have no valves. Its blood does not coagulate.

2° The cause of its return has been ascribed to the moon; if this were the case all women would menstruate at the same time. A month seems necessary. It arises like the return of intermittents from an association of Ideas and motions

3° What is its use. I answer to nourish the Fetus. To this I am aware of several objections. It may be said that all Animals menstruate not, that women bear children both before & after men=
=struation & during an habitual cessation. But this is a rare occur=
=rence. Brutes have certain seasons for the recurrence of the venereal appetite. At this time the uterus swells, there is an af=
=flux of humours to the parts. & always a discharge of slimy mat=
=ter in some instances mixed with blood. Does it appear then to generate in them a peculiar sensibility & increase the pleasure of the venereal connection; so that venereal desires appear rather to be an effect than a cause of menstruation. In women these

discharges

discharges take place monthly & accordingly we never find them without a desire for a venereal embrace. Dr Harvey tells us that the parts of generation in the female of some Animals are scarcely to be observed till the season of copulation & that the Uterus of a woman before menstruation, is found to be as small as a bean & after the period of cessation is found to diminish greatly in size. Women are more apt to conceive immediately before and after the discharge than at any other time. They seldom become pregnant till after 3 or 4 Menstruations. It has been urged as a proof against the theory of plethora being the cause of menstruation - that bleeding does not prevent its return - This is no objection because bleeding predis=posed to plethora by relaxing the system. For this reason Grazers bleed their cattle when they wish to fatten them.

*Peculiarities of the Male.* For a description of these organs of generation I refer you to books of Anatomy. 1st at Puberty the bones of the nose and forehead are enlarged 2d the breast spreads 3d the appearance of beard 4th Eruptions on the chin and face 5th a change of voice about the 14th year. These changes have been as=cribed to an absorption of Semen - since in Eunuchs no such ap=

pearan

appearance takes place. I object to it 1st because it is entirely hypo=
=thetical 2d It cannot be accounted for by the stimulus of the semen
upon the seminal vessels which have an extensive connection with
the other parts of the body; called by Physiologists sympathy. The stim=
=ulus of a glass of wine is felt after it is taken into the stomach long
before it should be taken into the circulation. The symptoms of concep=
=tion are owing to the stimulus of the semen, not to the absorption of
it. The weakness & want of beards in Eunuchs, indicate a disease
of debility from relaxation, from the want of the stimulus of the se=
=men. The gratification of the venereal appetite is followed by debil=
=ity; hence the saying "Omnia Animalia post coitum tristia sunt"
that peculiar smell which takes place in persons as they approach to
puberty is owing to a more vigorous circulation. All the symptoms
of puberty are owing to the stimulus of the semen. We have now
brought the sexes to that period at which they are able to propogate
their species. The Male & Female should never recieve the embra=
=ces of each other untill the former is 21 & the latter 16 years of age
& the longer they have refrained from the gratification of the venereal
appetite

appetite after they arrived at this period the better provided the for=
=mer does not exceed 30 & the latter 24 Years. Neither the force of
religion nor reason the proximity of death, nor the shuddering of
the earth from earthquakes nor any condition, nor deformity are
able to eradicate this passion. Rapes were committed under the very
walls of the Bush-Hill Hospital in 1793 when the groans of the
dying were heard from every quarter. Rapes were committed in
the very moments when an Earthquake made desolate the beau=
=tiful City of Lisbon. The Monster at the expressed a
great desire for a wife. Disease does not exist without this appe=
=tite it is present in Hypochondriasis, Hysterica, Epilepsy, Conval=
=escent state of Fever &c. Even old age does not chill the universal
influence of the venereal passion. Old Parr was convicted of for=
=nication, when he was 120 years of age. A Physician in this City
informed me he cured a man of the venereal disease who was 80
years old. Tis the effect of disease, tis morbid excitement; no man
can indulge it without sining unless in a matrimonial state.
An institution which obliges a man to confine himself to one
woman

woman is a wise one, for in this case appetite & excitement are are awakened together; but a strength in the former sufficient to gratify the former; hence an argument in favour of Monogany The Horse, Ram, Boar &c exhibit symptoms of madness in the seasons of Copulation. Dr. Hunter tells us a Frog will suffer amputation of a limb without seeming pain in a venereal connection, nay that it parts with its female but with its life. This Gent: should teach us a lesson, how ignoble it is to suppose that man was destined for no higher pleasure than a venereal embrace, when every animal possesses it in so superior a degree.

## Lecture 30th Dec. 20th

## Generation Conception & Parturition.

Generation - this is a difficult subject, clouds & darkness hang over every part of it. After the invention of the Microscope the Male Semen was thought to be full of Animalculo & the female only to afford a nidus. But it was reserved for the immortal Spalanzani to overthrow this doctrine; & by experiments to prove

prove that the Female ovum contains the embryo & that it was the male seed by its stimulus that put it into action. Thus we see 'tis stimulus which gives the first spring to life as well as support it afterwards. How does the semen act on the ovum so as to im=
=pregnate it? In the convulsion or venereal orgasm the conse=
=quence is that the ovum is torn from its ovarium & gradually conveyed to the Uterus. Spalanzani mixed 3 gr: of the semen of a Frog with a pint of water & impregnated a female one with as much as he held on the point of a sharp instrument. It is demonstrated by Physiologists that other parts of the body have a peristaltic motion as well as the Alimentary canal, & that the Uterus is amongst them by which means it discharges its na=
=tural filth. We have instances of women being impregnated with a penis not an inch long; when the Hymen has been preserved inviolated & when consequently the semen did not enter the Uterus May not the Uterus in these instances suffer an inversion of its peristaltic motion like the stomach does in the Water Brash & by this means convey the semen to the Uterus. I shall give you ano=
=ther

another theory advanced by Dr Harvey; that the semen is ab=
=sorbed by the Lymphatics & conveyed by the round of Circu=
=lation into the Ovaria. Here the mass of blood does not bear
a greater proportion to the semen floating thro' it than the 3 grs
in the pint in Dr Spalanzani's experiment. How long the ov=
=um remains in the ovaria after the embrace of the male has
not yet been ascertained. Semen acts as a specific stimulus
on the ovaria & on no part of the system else. It is in this re=
=spect analagous to certain poisons. But why mention poisons.
Mercury circulating in the system for several days excites a
specific action on the salivary glands. There are certain cir=
=cumstances necessary to a fruitful coition. The symptoms
as pain in the head, nausea teethache &c are the effects of a pe=
=culiar stimulus acting on the sensible parts of the body &
are to be relieved by the Antiphlogistic method. I shall men=
=tion two uncommon symptoms of conception which came
under my notice. One is a Lady who always feels a chilly cold=
=ness succeeded by a glowing heat in one of her legs. Another
is

is bent with a disposition to steal every thing that comes in her way. The breeding sickness as it is called, some people have supposed to be very necessarily connected with conception, 'tis not true. The final cause of the symptoms is to guard the system against inflammatory diseases to which at this period it is pre-disposed. The semen is formed not from the fluids, but from the solids & mind of man. Hence the reason why it is not se-creted untill puberty. The whole buisiness of conception there-fore is carried on in the Ovaria and nourished in the Uterus. The former may be compared to a hot bed where seeds recieve their first impression of stimulus & begin to vegetate, the latter to a green house where they recieve their nourishment and grow. May not the Stimulus of the male Semen impart to the child the likeness of the father. We know that light acting upon vegetables imparts to them all its colours. Thus Gent: I have passed through a difficulty beset with dangers from every quarter. I am so much of the opinion that the operation of conception is to-tally mechanical, that I have no doubt the time will yet come when

when the whole mystery will be brought to light. Dies Docebat. Ani-
-mal life – the Human Mind & Generation as well as the Will in
Physics & the Trinity in Religion, have always been approached
like Monarchy in Government with reverential steps. I have en-
-deavoured to tear the veil of superstition & risk some bold truths
concerning the nourishment of the Fotus; for a full description of
it I must refer you to the anatomical chair. Let me just observe
that Dr Darwin has lately revived the old doctrine of its being
nourished by the Liquer Amnii & that the circulation is carried on
between it & the mother merely for the support of Animal heat.
The ordinary time of Gestation is nine months but to this there
are some exceptions which you will do well to notice. They may
go only 6 Months &c. The cause of child birth seems to be the al-
-teration of the position of the childs head. The throws of the mo-
-ther are the effect of irritation on the os uteri by the heat of the
Fotus. Pain has been supposed to be necessarily connected with
Child birth. Tis not true. Man was doomed to earn his bread
by the sweat of his brow; yet by his ingenuity he has in some

measure

measure averted it. The time will come & I hope is not far dis-
-tant, that the pains of child bearing will be entirely removed as
those of the Cholic. I am led to conjecture this from the effects of
bleeding in a few minutes before delivery & the small degree of pain
with which weak habits bring forth their young. Bleeding acts
by bringing on debility. In Sicily & Turkey the pains of labour
are scarcely known. Two or three pounds of blood drawn at the com-
-mencement of labour would perhaps repeal the Curse inflicted
upon woman when she fell from the state of innocence. Dr Priestly
relates the case of a man who was sentenced for some crime to suf-
-fer punishment at stated periods. He bore it with uncommon for-
-titude & almost without a groan. Being asked how he bore it so
patiently he answered "he always fasted 2 or 3 days before his
punishment came on". This acted by debilitating the system. We
know not the effects of such a dose of opium as would lull the
system into a state of indirect debility. Health is that state of
the system, in which the excitement & excitability are in exact
ratio to each other with an equal diffusion of them thro' every
part

part of the mind & body. Thus you see it admits of a consid=
=erable latitude. Strength is not essential to health. Here Gent:
Man in his most perfect state. In taking a retrospective view
of him I feel as if I was standing on the top of a beautiful Cas=
=tle destined to Destruction. —

# Pathology. Chapter 1st

## Lecture 31st. December 21st. —

## Of Diseases, & the Origin of Moral & Natural Evils. —

We come now Gentlemen to view the body & mind in a diseased state. Every thing appears to have co-operated with our Creator to cut short the life of man. Diseases are absolutely necessary. Diseases 1st Lead us to the study of Anatomy & to view the works of our Creator 2d They lead us to study the different kingdoms. 3d They furnish an opportunity of observing the moral

faculty

faculty 4 They excite to benevolence charity &c 5 They are necessary to our relishing health 6th They render our passage out of life less terrible. Pathology is a study that has been but little cultiva-ted. Gaubius &c who have written have suggested theories quite absurd. In the Wilderness therefore that is before me I proceed without a guide or a compass to direct me. By Pathology I mean that science which teaches us the seat, cause History &c of dis-eases. Causes of Diseases. These are Remote, Predispo-sing, Occasional or Exciting, & Proximate C.C. We will say Cold is the remote cause. Debility induces the predisposing, Heat the occasional or exciting cause, & convulsed or irregular action in the Arterial system the Proximate cause. They are all links of one chain. You are not to suppose the chain of course exists in every disease. All diseases depend upon a predisposing debility. From these except the local. This debility is of two kinds di-rect & indirect. Even contagious diseases are not without a predisposing debility. We shall say a scale of 50°. An Abstrac-tion of Stimuli produces direct, & an increase produces indirect

debility

debility. Tis unfortunate for medicine that these states have been so much confounded. The range of predisposition may be said to be 10°. The more sudden the abstraction of stimuli, the more the excitability is accumulated; & I believe with the ingenious Dr Brown that few men die without carrying in their graves with them a great portion of excitability. Few I believe die of old age. No more happens in a dead state than happens to a silent bell; both are dead merely from the abstraction of stimuli. It is as absurd to say that the body possesses vitality as to say that the bell possesses sonorability or a musical instrument musicality Let us remember that like government medicine has no half truths. Debility is the cause of Moral as well as Physical evil. Evils of all kinds consist in debility. In the body it is acute & chronic. Debility is a negative quality, it possesses nothing positive. Small pox Measles, Yellow Fever, &c are misplaced evils. They are an Error Loci. We know that bread sometimes when swallowed enters the Trachea & produces diseases & sometimes instant death. Now who will say that the bread possessed any malignant quality - it is altogether

altogether an Enor Loci; because had it gone down the Osophogus it would have been grateful to the Stomach & tended to nourish the body. If it were possible to bottle up the contagion of the Yellow Fever we should procure a most delightful cordial. Of this I am firmly persuaded. Is pain a positive evil? no it is not it is a diminished State of health. Moral Evil. This consists only in debility. Every vice is but a misplaced Virtue. Debility in the Will has produced all the evil in the world. Evil has nothing positive it is altogether negative owing to an abstraction of good. Debility is the inviting cause of inegular action. Disease observe Gent: consists in inegular action. Disease is always partial. I know of no disease that produces inegular action in every part. In Fever the sanguiferous system is affected. In Dysentery inegular excitement discovers itself in many parts. Pain is a mere symptom. There may be disease without pain, but there cannot be pain without disease. I have formerly said there was but one Fever in the world. Be not startled Gent: follow me & I will say there is but one disease in the world.

The

Dr Rush rejects the Term Temperament & substitutes Predisposition
Of these he enumerates the following 8. Arterial. Hepatic. Nervous.
Muscular. Cephalic. Alimentary. Lymphatic. Cutaneous. The Ar-
terial may be subdivided into the Aortic. Pulmonic & Uterine. Asthen
may exist disease in the Aortic system, without the Pulmonic or Uterin
being & e contra. Persons of a Nervous Predisposition are subject to Hyp
teria. Melancholia &c. In the muscular there is little sensibility but
irritability predominates. To people of this predisposition rest is pain
ful, & repose is found only in motion. Those of the Cephalic are subject
to Headach, Phrenitic & delirium from slight cause. Alimentary may be sub-
divided into Gastric & Intestinal. for the stomach may be disordered
while the Intestines are in a healthy state & vice versa. In the Lym-
phatic the functions of the lymphatic system system are carried
on with undue celerity & energy. Persons of the Cutaneous Predisposi
tion are most very liable to diseases & Affections of the Skin.
One or other of these Predispositions exists in every man & frequently more
than one in the same person. The Cutaneous, Muscular & Alimentary
often coexist in children. Hence the frequency of cutaneous erup

The proximate cause of disease is irregular convulsive or wrong action in the system affected. This Gent: is a concise view of my theory of diseases. Some have called me a Brunonian in Medi=cine. They may have called me as well a Mahometan in Religion. Dr Brown & I differ in the most material points. He divides diseases into Sthenic & Asthenic. I say there are no Asthenic diseases. they are all originally sthenic. I remove diseases by 1 taking down ex=cessive action. 2d Creating a new action. 3d restoring the system. I call upon you Gent: at this early period either to approve or disapprove of it now. I shall certainly get you entangled. Excess of action does not constitute disease, by much exercise excessive action is induced; but no disease. Neither is debility disease it is only predisposition to disease.

## Lecture 32d Decr 22d

I've now come to enquire into the numerous causes which lay the foundation for diseases & first the remote causes. It has been aptly observed that as soon as a child comes into the world it

inhales

tion. Convulsions & Bowel complaints -

inhales the lurking principles of death 1st Children are often predisposed to disease in the time of delivery. from the ignorance of midwives & before they are born by the indolence & intemperance of the mother 2d by washing the body with spirits, wine, or even strong soap suds 3d by the first diet being too stimulating as spi=ces &c 4th Dress of children as Caps stays swadling clothes &c 5th Use of Ardent spirits to allay the Cholic often lays the founda=tion of diseases 6th Sucking bad milk 7 Manner in which chil=dren are educated as an early application to hard study tyran=nical schoolmasters Close rooms confinements &c 8th Amuse=ments of children subjecting them to falls Bruises &c lays the seat of diseases particularly Hydrocephalus Internus &c The sensible & insensible qualities of the air induce diseases 1st. Alterations of heat & cold 2d Effluvia from the human body and marsh miasmata combined with the atmosphere. Excess of Oxygene produces diseases. Insensible qualities of the air. Heat is an uni=versal stimulus. Heat and Cold are relative terms what will freeze us may be a powerful stimulus to many animals. Heat

Heat is particularly agreable to old people - You may almost tell a mans age who has been healthy by his desire for a warm room or climate. In excess heat shews itself strongly in 1st the Arterial system 2d When combined with the suns rays it acts upon the Brain by producing Insolation 3d It acts on the Nervous system & produces an increase of excitability Hysteria Syncope &c 4th In the Muscular system it produces Langour, Weakness, Te=tanus &c 5th On the Stomach & Bowels by producing in the former great appetite if moderate - in a greater degree a loss of it - in the latter - Cholera Dysentery. Bilious Fever &c 6th It acts on the skin by producing universal sweat - in a higher degree it produces a preternatural sweat, Pimples on the skin & makes it of a brown colour 7th It increases the Venereal appetite - Hence the early marriage of people who live in warm climates & Hence also the great number of births in cold weather in climates of a middle temperature. In those places the inhabitants are stimulated to venery by the warmth of the vernal sun 8th It acts on the Blood producing a tendency to putrifaction - it also

increases

increases the secretion of bile which corrects this putrifactive ten=
=dency 9th It affects the eyesight hence in warm countries the
frequency of Gutta Serena Cataracts &c 10th It affects the moral
faculty & other faculties of the mind 11th It is less unfriendly to old
than young people Hence the inclination of people to emigrate
to warm climates in the evening of their lives & for this Reason
the old Romans emigrated to Naples. Excess of heat will some=
=times produce immediate death. A sudden abstraction of it will
produce fever. It is remarkable that one season will generate and
another produce diseases - for instance moist moderate weather
succeeded by cold produces diseases hence the propriety of the Adage
saying "a green Christmas makes a fat church yard" No season
would be necessarily unwholesome provided people would be gui=
=ded by reason. I conclude that heat produces disease only in
consequence of some irregularity. Inflammatory fever is often pro=
=duced by heat in a moderate degree succeeding cold. Its action
on the increased excitability produces indirect debility.

Heat with Moisture. Warm air to be healthy requires moisture
Hence

Hence Travellers in the deserts of Arabia, relieve their choaking & suffocation by applying a sponge wet with water to their nose & for the want of moisture the heat of a stove is disagreeable it may be remedied by placing a bowl of water on the stove to evaporate. Wet seasons are healthy provided there be no exhalations. Rain sometimes produces exhalations by breaking the serum on ponds I conclude that wet seasons are generally healthy. Cold has been supposed to act as a stimulus it is erroneous. Cold is a negative quality 'tis only an abstraction of heat - it is a se=dative. This I infer 1st from its producing a weak low pulse weakness &c 2d from its effects being analagous to bloodletting purging &c. Cold therefore produces debility. Cool air does not act as a tonic in warm weather. It only acts by taking down the indirect debility induced by heat. How does Bloodletting raise the pulse? I answer by relieving it from a state of depression. Emetics act by relieving the system of the too great stimulus of the bile &c Cold produces 1st in the Arterial system Excitability Irritability, a weak low pulse &c 2d In the Nervous system a dulness

dulness of sensation &c 3° In the Muscular system Langour Debility &c 4th In the Stomach increase of appetite Hence cattle eat most in frosty weather & Hence the Dutch put their cattle in warm stables that they may eat less 5 It weakens the ven=ereal appetite 6th It renders sweating difficult & increases the Urine 7th it is unfavourable to vision 8th It affects the mor=al faculty.

## Lecture 33d Decr 23d

Cold is said to produce scurvy; But I say other causes must operate to produce it 10th Cold in a certain degree produces pale=ness in a greater degree by producing relaxation or Torpidity & Effusion it induces a redness. This is as Petechia &c a dead=ness of the parts. In a still higher degree it produces Gangrene or disorganization 11 It acts most powerfully in the sleeping state Hence fevers occur most frequently in the night 12th It acts most powerfully on the body when the Stomach is empty 13th It acts most powerfully on old people Hence the frequent death of

of old people in very cold weather 14 It acts powerfully on sick people in a state of debility hence loss &c of sick people apt to be frost bitten 15 It acts powerfully on drinkers of spir=
=ituous liquors 16 It acts but feebly on children - the following in support of it is a fact. An Indian woman was found dead in consequence of an excess of cold with a living child tied to her back. These are the ordinary effects of cold. A Season in which the weather is variable is unhealthy; yet a regularly cold cli=
=mate is healthy. Heat succeeding a cold spell produces inflam=
=matory fever - succeeding a long one it produces Chronic Gan=
=grenous or Typhus fever - Cold succeeding heat produces Cholera &c. I know a Gent: who is subject to a cough & can at any time bring it on when in bed by putting his hand outside of the clothes. Cold therefore is not unhealthy unless it be succeeded by heat or combined with moisture. It has been observed that people on the Potomak & that way do not bear bleeding I as=
=cribe it wholly to their luxurious manner of living. I have seen fevers in luxurious citizens run thro the inflammatory stage in

in 24 hours. The Citizens in Pennsylvania are now in the cli-
-mate that the citizens of London were in the time of Dr Syden-
-ham, when bleeding & small beer cured all their fevers. Cold wet
feet will produce Catarrh &c. The cold hand of a Physician will
often produce a general rigour on the patient. Moisture increases
the sedative power of cold by conveying off the heat of the body
Sailors we know always complain most of cold when the weather
is moist & indeed Gent: we must all have observed it. The mouth
& feet are the avenues thro' which we recieve nine tenths of our
diseases. I except one Gent: which is the venereal disease - ha! ha!
June from many calculations & observations is the most heal-
-thy month in the year therefore Gent: when you with to take
an excursion, always choose the month of June. there is a sol-
-stice in diseases they change their weapons for others. Night
air is most favourable to produce colds on account of moisture
being combined with it. A very cold day Gent: —

Lecture

# Lecture 34th Dec. 26th.

We come now to consider impregnations of air as remote causes of diseases 1st Marsh Effluvia are a fruitful source of disease. Heat & Moisture are essentially necessary to the production of it. Heat must be above 80 Effluvia from water alone will not be unwholesome. A Summer so hot as perfectly to dry the ~~Coco~~ grounds or so wet as to totally overflow them is healthy therefore it is such seasons as are not so hot as to dry up nor so wet as to overflow; that are sickly. It was urged as an Argument in favour of the importation of the Yellow fever of 1793 that the neck between this City & the junction of the Schuylkill & Delaware was healthy; it was owing to the uniform dryness of that season there was not moisture enough to promote exhalation. The effluvia from putrid vegetables is the one which generally produces disease. Labourers in the County of Sussex were healthy untill they cleared the land so so much as to admit the action of the sun on the putrid vegetables which lay on the ground; they were then troubled with

with intermittents. All sorts of vegetables when exposed to heat & moisture become putrid & unhealthy 1st Old book printers often ex= =perience their ill effects - 2d Paper Money. The sons of the Treasurer of New York were affected with Diarhoa &c From handling paper money that had been standing for a long time 3d Old Wood the Timber of a Ship for instance. Stagnated air from the hole of a Ship often produces disease. The air of Cellers is unwholesome, hence the necessity of having Chimnies in them by this means the air which becomes light by its warmth escapes & pure air takes its place. I do not deny but animal putrifaction will sometimes produce disease; but that it is seldom a source there are innumerable & incontrovertible facts. If it were what would have become of the Cities of Edinborough & Madrid &c &c Also those families near Livery Stables. Upon what part of the system do these exhalations act? I answer they act 1st on the Arterial System as a Stimulus. When in a great degree they produce indirect debility. Hence bilious fevers &c 2d Upon the Brain & Nervous system Hence intermit= =tents are often ushured in with Convulsions 3d Alimentary Canal

Liver

Miasmata are supposed to act in one of these four ways. 1. Thro the Medium of the Lungs. 11. The Nerves & Brain. 111 The Stomach. 10. The Cutaneous absorbents. Dr Rush rejects the last opinion. Miasmata which excite epidemic diseases, as Yellow fever. Small Pox &c. exert their effects primarily on the Brain & nerves. This may be inferred from 1. The pain which so generally attends. 11. The vicinity of the Nose to the Brain. & 111. From the function of the Brain being so much impaired in these diseases. The sickness at stomach which sometimes attends the first inspirations of miasmata arises from sympathy of the Stomach with the Brain.

Liver &c. The same miasma received at the top of a hill when it combines with cold & moisture produces Dysentery while at the bottom it produces Bilious Fever. This is a curious fact & worthy your notice Gent: These facts add force to the long since explo-ded doctrine of specific contagion Dysentery depends on the same contagion as Bilious fever it is justly called by Dr Sydenham "a febris introversa" Bilious Cholic also on the same contagion. The College of Physicians of Philadelphia have made a curious distinc-tion between the Bilious & Yellow Fevers such as has never be-fore been made by any Author or Body of Med: Gent: they dis-tinguish the Yellow Fever by its being universally contagious — Absurd!! Dissolved Blood has been supposed to be owing to putri-faction — it is not the case — it is owing wholly to the powerfully increased action of the solids, they tear the blood to pieces as it were. I have been branded with being the author of this opinion "absur-dity" as they called it. I am not 'tis Dr Sydenham Effluvia are always most noxious to Health in the mornings & evenings. In the middle of the day they are carried off by the suns heat and air.

Some

Some hours after sunset it is nearly as wholesome as in the mid=
=dle of the day because the effluvia are precipitated. I have al=
=ways advised my friends who left the city at the time of the fe=
=ver to visit it in the middle of the day & return before sunset.
Graziers have fed their cattle on & improved their lands lying
on the sickly neck near this City & unless they were detained
till after sunset with impunity. When night overtook them
they generally carried home with them the seeds of an intermittent.
2d Human or Animal Miasmata are also a source of disease. It
is favoured by 1 Uncleanliness 2d Confinement in a croud hence
sickness in Gaols Hospitals &c 3d Low sapid vegetable diet 4th Pu=
=trid Aliment 5 Scanty diet 6th The Breath of people of different na=
=tions mixing together. The Camp fever in the Campaigns of the
Russian & the Austrian Armies half the soldiers & a great num=
=ber of Physicians. Can the effluvia of a body generated with itself
produce a fever? I answer Yes 1 Cold Weather is favourable to the
spreading of contagious diseases in consequence of contagion being
concentrated in Houses shut up from the cold. Dr Blane says that in

in voyages to cold countries the Jail Fever increases & vice versa
he accounts for it in a very natural way by saying that where it
is warm the sailors stay much of their time on deck so that the ex-
halations of their bodies are carried off by the wind. The Yellow Fe-
ver never comes on in July & August nor till the cooler ones of
October & November 2ly Woollen & Cotten Clothes will retain & spread
contagion. A Stocking which was worn by a Gent: who had the
Yellow Fever being tied around his servants neck communicated
the disease to him. A Jacket of a Convict in Harford County which
he had kept in his budget after leaving the Ships crew when taken
out communicated a Yellow Fever to the families in which he lived.
Wood will also retain the Effluvia. You should always remove all
curtains & unnecessary clothes from the room of your patient. He
should be removed into the middle of the floor as the walls of a
House will retain the Contagion; & be the means of keeping up your
patients disease. White-washed Walls will not retain the effluvia
3 Effluvia exert themselves chiefly on bodies in a debilitated state
the stimulus of Distention as Pregnancy is certainly unfavourable
to

Fever arising from human or Idiomiasmatic exhalations may be known by occuring in convalescents chiefly & in weak and debilitated persons- It is not destroyed but on the contrary made worse by cold weather- The Influenza is not contagious but depends on an Epidemic constitution of the air-

to contagion. The Fevers produced by human effluvia are one Typhus Mitior. Typhus Fever often depends on direct debility as the Fever which succeeds Parturition, Emptying Abscesses &c which are called Puerperile Hectica &c They are caused by abstracting the stim-
-ulus of Distention. Rabies Canina is caused I think by the reten-
-tion of morbid secretions in the system which act too powerfully as a stimulus 2° Plague. Its contagion altho' arising from the same matters acts most violently on the system it produces Buboes, Eruptions on the skin &c & kills most suddenly. There have been many instances of people falling instantly dead from the violence of its action. They are different Grades of one original Fever 3° Dys-
-entery which is sometimes like 4th The Jail Fever communicated by human effluvia 5 Influenza is certainly a Fever of Animal Origin. The fevers depending on human effluvia may be known from those depending on Marsh, by occurring at all seasons & not being attended with a discharge of Bile, a small degree of inflammation &c. Whereas those from marsh effluvia occur in the fall & are attended with large secretions of Bile &c A great-

great degree of Arterial action by being more easily communi-
=cated to others &c 1 Diseases often arise from a quantity of phlo-
=gisticated air 2 Air is unwholesome when discharged from sul-
=phur as from Coal Mines &c 3 Air from certain Manufacto-
=ries especially those which volatilize Lead Arsenic &c is un-
=wholesome 4 Late evening air 5 Samoon winds as called by
Bruce by others Hamatan owing to the great quantity of Vitri-
=olic acid they contain. Persons who die from the action of these
winds putrify in a very short time 6 Cheske winds 7 An over
quantity of Oxygene disposes to diseases of the inflammatory kind
8 Mr Bruce mentioned another probably of the mephitic kind
which acts only on Animals. They are in a place near the Nile
tho' it be never overflowed. He lost two of his Greyhounds & all
his Mules by the influence of this air; perhaps it does not act
on man because he does not stoop for his nourishment as Ani-
=mals. With these observations we finish our account of im-
=pregnated air.

Lecture-

# Lecture 35 Decr. 27th.—

We come now Gent: to consider the influence of particular situ=ations in producing diseases 1st A New Country is always Heal=thy till the Timber, which excludes the action of the sun upon the Marshes &c be cut down. But from the time it is cleared till it is cultivated it is unhealthy. Chief diseases from country air. are In=flammatory, Bilious & Dysenteric Diseases. the Plague visited Lon=don ten years successively. Untill Agriculture & Horticulture were improved in the vicinity the Inhabitants enjoyed bad Health. 2d Cities & Towns they are the Gaols & Graves of the human species, they are unhealthy in consequence of dirty streets, Action of the Sun upon the pavement &c. Cain was the first man we read of who built a City he being cast out from amongst men probably dit it thro' revenge against the human race. Diarrhoa's not so common in towns as countries owing probably to the difference in Diet. Coffee & Tea may prevent & much vegetable diet increase the Diarrhoa 3d The nature of the soil of either town or country 4th Mountains generally healthy there are exceptions to this. In some of the

Islands

Islands the Mountains are most sickly when they are high & the miasma abundant. They either by intercepting or attracting it become sickly 5th The vicinity of a Town or City to Marshes but the miasma may be checked by planting trees between the marshes & houses it may be carried 10 Miles if not interrupted. 6 Vicinity to deserts & the Seashore. The Sea shore air is unfriendly to Asthma Pulmonary Consumption & Rheumatism perhaps owing to the mixture of land & sea airs. The seashore air is medicinal to all diseases except those above mentioned 7 Cellars 8 New Plaistered houses owing to the Moisture.

Change of Situation produce diseases 1 Migrating from a cold to a hot climate 2d from Marshy countries to a Town 3d Old people removing from marshy to more airy and healthy situations owing to the abstraction of miasmata. When it was proposed in this City to have the dock arched over; it was offered as an argument against it. That there were more old people in this street than in any other in the City. This was the case; & it is always a sign of an unhealthy situation; because the miasmata which are noxious

noxious to young people, serve as a stimulus to old ones. Poisons Therefore Cent: are only a relative term - they are only unhealthy when misplaced. The contagion of the Yellow Fever might be bot=tled up & used as a most delightful cordial. Persons on long voyages coming near land are apt to get Catarrhs; owing to the mixture of land and sea air. Sneezing with sailors is a sign of their near ap=proach to land 5 I have taken some pains to find out whether Thunder & Lightning have any effect in producing disease indepen=dant of the change of the air; but I never could meet with any but this single instance. A Lady with whom I crossed the At=lantic was always affected with a severe head ach at the time of a Thunder Storm. One day a storm came on, Her Head began to ach & she was frightened. After it had rained some time I went upon deck & found the clouds began to disperse - with this I went below & told the storm was over, for the sun began to make its appearance. No said she it is not over yet, we shall have more thunder my head still aches; immediately after there followed a very loud clap now said she 'tis over we shall have no more thunder, & so it was.

This

This head ach never decieved her 6th Head aches in many are pro-
=duced by the rising and setting sun 7 Light & Darkness. Light
is hurtful in diseases of great action; but good in low states of Fe-
=ver. It often induces sleep in convalescents 8 Sounds produce
diseases in some. I knew a person killed by sound in the time
of the last war. Fevers of an inflammatory nature are initated
by the tolling of Bells

Influence of the Moon is felt by all animated nature
It has been observed that more deaths occur three days before the full
& change of the moon than at any other time: This I observed in
the year 1797 1st Fevers are influenced by its action 2d Its influ-
=ence is perceptible in Epilepsy 3 Worms 4 Lunacy 5 --
6 Hemoptysis is often produced. I have very remarkable of this
kind is related by Dr Mosely which attacked the person at no
other period 7 Calculus & Births are hastened by it said Dr
Kilpatrick 9 Syncope is often produced by it 10th the Gout is not
unfrequently brought on by its influence. —

Lectare

# Lectur 36th Decr 28th.—

## Of Specific Contagions.

They are called specific be-
-cause of their affecting particular parts of the body 1st Small Pox
is known for a particular soreness of the stomach Pain in the Back
&c The usual time of the small pox contagion lying in the system is
14 days tho' there are instances of its remaining much longer. It
may be retained in clothes for years 2 Measles. Its contagion
shews itself upon the skin & lungs; of both these diseases are more
in my Inq: Vol: 2d.— 3o Cynanche Maligna 4 Scarlatina Angi-
-nosa. The contagion of these two diseases has been supposed to be
the same but they are certainly different; they both act on the mu-
-cous in the throat. I never saw but one case that did not affect
this part. in this the skin was more affected than usual the skin
of the hand came off like a glove 5 Hooping Cough vide Dr Cullen
& Dr Johnson 6 Influenza it does not depend on the sensible qual-
-ities of the Air it is the most universal epidemic we are acquain-
-ted with 7 Chicken Pox 8 Miliary fever this was supposed to
depend upon contagion but it certainly originates from a hot
regimen

regimen. The small pox is influenced by the air it is most in=
=flammatory in winter & spring - in summer it puts on bilious
symptoms. The Scarlatina Anginosa is not much influenced by the
air. No two of there diseases can exist in the Arterial system at
the same time. I would as soon believe a Horse can Trot & Gallop at
the same time, as believe they can exist together. When two or
three of there diseases prevail together one always predominates
over the others. I have supposed there was a kind of Monarchy
in diseases, all paying homage to the reigning disease. Keep your
eyes attentively fixed Gent on the reigning epidemic, it is this
that will explain all anamalous symptoms - Of this Sydenham
Moreton Rupsel & others were all sensible - Epidemics have
different appearances according to the time they appear - an epide=
=mic I have observed attacks with all the fury of a savage Fretices
with the mildness of a civilized Doc Vid my 4th Vol: Eng: Conta=
=gions do not affect every person at the same time of this we
have many instances. There is frequently a variety in its vio=
=lence this I cannot well explain probably it is owing to more

or

or less oxygene. Some affect as deep as mosaic work others as light as water colorings. Contagions sometimes affect people only of particular nations sometimes those only of a certain colour (vid. my 4 Vol: Inquiries)

Of Aliments in producing diseases. It is hurtful when taken in too large quantities. The stimulus of destention induces indirect debility it is most injurious when succeeded by hard labour. Too much food disposes to all diseases of the plethoric kind as apoplexy &c It should differ in quantity according to quality. We should eat less meat than bread & less bread than vegetables. Life has been preserved for months without aliment by water either drank or absorbed. A Girl passed the same quantity of water daily by urine which she drank what supposed her must have been absorbed. The seeds of disease have been often laid at boarding schools by a too scanty diet this induces direct debility. Slaves in some parts of America have not a sufficient allowance hence unfruitful marriages a want of venereal appetite &c Famine makes all the fluids of the

body

body acid & fœtid. A Man who wanted to imitate our Savi=
=our by fasting 40 days had so acid & fœtid a breath as to
bring tears into the eyes of those near him.

Different kinds 1st Fish. This was the first food of Man
many nations live solely on them - they contain but little nou=
=rishment - they are said to lessen the venereal appetite Effects
of a diet on fish alone are 1 Change of colour 2 Lice 3 Leprosy
Fœtid breath - Diarrhoea - Diseases of the skin, scorbutic affections
&c a remarkable instance of this was communicated to me by
the late Dr Morgan. For particulars on this subject I refer
you to Dr Robertson's notes on the History of Charles the Fifth
Aliments & Drinks in producing diseases act by their quan=
=tity & Quality - 1st From their quantity by distention in bringing
on Atony & consequent Dyspepsia 2 Quality - too much rich food
thrown in produces all the direases of plethora. It is difficult
to determine the quantity necessary to be taken. I have for=
=merly said that many circumstances influenced it. I should
suppose from 4 to 6 pounds a day sufficient for those who lead
sedentary

sedentary lives You will often Gent: be teazed by your
patients & their Friends what they shall eat. they have no
appetite - 'tis not necessary they should eat for the stimulus
of the inflammatory fever will support them. but in dis=
=eases of debility you should give them cordial nourishing
food. A too small quantity in producing disease is evident
in boarding schools Colleges &c. Abstinence in a great degree
produce diseases. This naturally leads me to enquire into Fa=
=mine - it produces severe pain in the Stomach from the effu=
=sion & acrimony of the bile. Offensive breath. Watchfulness.
Homorrhagies. swelling of the faucer. Mania & Death. Hunger
produces strength in many animals. in a small degree it pro=
=duces it in man hence the propriety of the expression "Hunger
will break thro' stone walls" In what manner shall we ac=
=count for its producing strength? It is owing to the stimulus
of the desire of Life acting upon the excitability accumula=
=ted by Abstinence.

Lecture

# Lecture 37th Dec.r 29th

## Of Vegetable Diet.

This constitutes the food of a large portion of mankind 1st Farina most nourishing 2 Roots & Fruits there are nourishing in proportion to the saccharine matter they contain. The stones of fruit are apt to produce Cholic and sometimes death. A constant vegetable diet generally produces weakness swellings Costiveness Dysentery &c It weakens the Venereal appetite hence it is a proper food in Monasteries & Seraglio's. It lessens the ferocity of the mind. Hence of seivice in insanity. It prevents dreaming & brightens the faculties of the mind. Hewson used it. A Man who used to be troubled with dreams, was advised to eat of a vegetable diet to prevent it - it did so - But as soon as he returned to the use of animal diet he dreamed. Milk is both Animal & Vegetable Cheese the Animal: Butter the Vegetable. A patient requires milk when he cannot take it When he calls for it it is a good sign. Diseases are often produced independant of the Quantity & Quality, from the manner of cooking. Meat eaten soon after being killed is difficult of digestion. When it

it becomes old or rancid it produces Diarrhoea. Diet ta-
-ken into the Stomach without sufficient mastication or in
the manner of bolting is productive of disease - never lose sight
of this Gent: in Dyspepsia. Fish when kept a few days & eaten
will bring on Diarrhoea & Eruptions of the skin - Oysters hard roas-
-ted are unwholesome; so are eggs if done hard. Vegetables tending
to putrifaction produce diseases. Bread half baked is frequently a
source of disease as Cholic. Toasted Cheese I have often known to
produce disease. Small meals in sickness are essentially necessary.
A sudden transition from an Animal to a Vegetable diet produces
a very great change in the system & oftentimes disease; but a
sudden change from a Vegetable to an Animal diet is pro-
-ductive of still more dangerous consequences. People have
fainted at the smell of animal food after having been con-
-fined a long time to Vegetable. I have been so affected with
this myself that I have been obliged to leave the room. Con-
-valescents from the small pox should return gradually to an
Animal diet else sores occur. It is to this sudden change that

relapses

relapses ~~in~~ in convalescents are often owing from living some time on vegetable diet & then changing suddenly & eating a hearty meal of Animal Food - see an Essay in my 1 Vol: of Eng: I am so sensible of these remarks Gent: that I always make my patients labouring under Chronic diseases, dine only on one dish let that be what it will. Aliments too hot or too cold will produce disease. Novelty of food often disorders the Stomach and thereby the whole system - some Vegetables excite the same symptoms every year; as Cucumbers Radishes Melons &c &c. In these cases it seems the stomach had forgotten its old acquaintances but by a little use becomes familiar Aliments often produce disease by lying in the stomach in an undigested state. I was once called to visit a Lady labouring under incessant vomiting pain in the Stomach &c I tried all the remedies indicated in such cases but all to no purpose. I at length gave her a gentle Emetic which discharged a lump of toasted cheese which had been there for some time & when discharged was followed by an abatement of all the symptoms.

&

Of course Gent: it is of consequence to enquire into the diet of your patients for some time back. Dr Waller says fat meat lay 40 days in the Stomach in an undigested state. I have heard of fat meat & the roes of fish laying in the stomach for 2 Years Victuals cooked in copper or leaden vessels are productive of dan=
=gerous consequences. The late Dr. F. Bond & his Lady died with=
=in a few days of each other - it was said to be from this cause Aliments become unwholesome from certain extraneous bodies being combined. The diet of fowls & Animals sometime before they are killed. I have seen serious consequences from eating a pheasant which had eaten laurel berries. Deer's flesh is some=
=times poisonous from the same cause. The Students of Princeton College were all seized with Cholic the night after eating a Pie which was made of Pidgeons that had eaten poke ber=
=ries. Diet of fresh meat is unhealthy. Hence the healthiness of country children who live on salted meat. Salted meat is never unhealthy when there is a sufficient quantity of veget=
=ables taken with it. But when eaten without them produces

cutaneous

cutaneous diseases. We should be more healthy if we ate salt meat in the summer & fresh in the winter. Food when taken against the appetite is bad. There is often an Idiosyn=
=crasy in some people with respect to diet.

## Lecture 38th. Decr. 30th.

Diseases are often times induced from a use of Condiments. 1st Salt. This article is very much used, some who cannot obtain the common salt use the vegetable alkali. Many live with=
=out tasting it. When those unaccustomed to it, use it, it is apt to produce vomiting & purging. It induces many diseases as Scor=
=butic Leprous &c. There is a violent case of it in our Hospital brought on with eating salt meat 2d Vinegar in small quantities is a good Condiment, but when it is used largely it produces many diseases 3 Mustard. it produces Dyspepsia &c 4 Sugar tho' the most grateful & nourishing of all Condiments yet in ex=
=cess it produces diseases. A Merchant in this City had a most obstinate Dyspepsy only by tasting a great many kinds of sugar

hence

Hence a hint to parents not to indulge their children too much in sweet meats. 5th Honey & Molasses in certain quantities produce Dyspepsia. 6th Spices they induce Dyspepsy. Coffee & Tea. they produce diseases in consequence of being made too strong. Hysteria &c were introduced into England by these two articles - of themselves they are not nourishing they are stimuli. Anthoney Bennizett used to support himself under the fatigue of Schoolkeeping by strong tea. Coffee when used strong is apt to produce Vertigo. Linnous says it lessens the venereal appetite. But whether it will we have not yet sufficient documents to prove. Tea & Coffee have brought about a wonderful revolution in Europe. They are taking the place of spirituous liquors in many public places in Europe. What a change would this produce in America. They will support a person under any fatigue of body or mind better than any other drink whatever. They are perhaps the stepping stone for the drinker of spirituous liquors to descend to a natural state of temperature.

Effects of Drinks in producing diseases 1st Water is the drink of nine tenths of mankind - 'tis the beverage of nature. Dr Haller retained his Eye-sight to a very old age. He attributed it to a constant use of water for drink from his 18th year. It produces diseases by first its sensible qualities - in the first place from its coldness it affects the teeth. Dr Spencer an eminent dentist in this city informed me that he drew three teeth in summer for one in winter owing to the cold water inducing tooth ach - 2 Cold water taken into the system when the body is universally heated produces pleurisy - inflammation of the stomach, Liver Mesentery &c its effects in this country are violent spasm in the stomach occasionally syncope &c - it acts like cold air in succeeding warm seldom produces diseases. Water that has stood some time in the air allays thirst best. I was taught this fact by a Carpenter. 4 Extraneous substances introduced into the water, as lime water, this produces vomiting & purging. Water is pure in proportion to its facility in forming soap suds. I mentioned in my last lecture that when families are sickly without any known cause, it

it is proper to suspect Cellars. You should also suspect the water they drink. It has been said to be wholesome in the morning early - or at night - it is false - it was suggested by in=temperance 5th large draughts of water are unwholesome it will produce Dyspepsia & Swilling in time of eating is altogether un=necessary & ridiculous 2d Wine. Nourishing & Stimulating its acute effects - drunkeness & Chronic increase of fat produces Gout. In Turkey the Gout is unknown because their religion forbids the use of fermenting liquors - the Gout induced by these is chiefly confined to the feet & legs. Most apt to produce it in moist countries. All Wines most apt to produce it in proportion to the acidity which they contain; hence the low wines the most unhealthy 3 Beer - it is unwholesome in proportion to the acid & Spirit it contains it has been said to produce gravel - if it do, it is from its acid as the basis of the human Calculus has been proved to be an acid 4 Cyder - it produces gout - the first fit of gout Dr Franklin ever experienced occurred immediately after a draught of cyder 5 Ardent Spirits - here had I an hundred tongues

arms

armed with all the eloquence of Ancient & Modern days they would prove ineffectual to describe the disease & injuries derived from these detestable liquors (vid vol: 2 my Ing:) they destroy all moral qualities; Hence drunkards are so deficient in morality— the intemperate use of them seldom fails of producing death nor do their bad effects end with death; for they contaminate the very ground that covers them. Circumstances which induce people to use them are Wet & Cold, long intervals between meals. Hence the meredian Bowl and morning dram Hence Gent: you see the necessity of eating frequently tho' it be little at a time. Guilt, Debt, much company- speaking long the mouth gets dry & requires moisture & stimulus, taking medicine in spirits, breeding sickness &c all produce a love for spirituous liquors; it may seem strange, but I believe Grief never leads on to their use. Tis happy for mankind that the doctrine of Dr Brown has met with a Check both in Europe & America.

Lecture—

# Lecture 30th Jan: 2d 1797——

Dress. "Who would suppose that the covering of primeval in=
=nocence would have any effect in producing disease? Dress in pro=
=ducing diseases acts from 1st Quality 2d Quantity 3 Fashions. Two
thirds of the diseases of the autumn in this City are caused by too thin
clothing. Tis an old saying "Pride is never too hot nor too cold "
Many change their clothes with the season of the year but 'tis ab=
=surd - they should be changed with the changes of the weather. In
Children diseases are occasioned by clothes being too tight round
the head or breast as swadling cloths tight breeches tight shirt col=
=lars &c are sources of disease. I have even known tight buckled
shoes produce disease as Vertigo a case of which I was witness to
'tis remarkable that the very complexion of the body is changed
by clothing. In contemplating the poultice & many other parts of
dress we must conclude mankind to be a variable part of the Cre=
=ation. Dean swift says Man is capable of reason not a reason=
=ing Animal. Flannel shirts worn next the skin will prevent ma=
=ny diseases. I have known the use of flannel shirts to preserve

the

the health of a whole army. No vermin are bred in it when worn months without washing. Cotten is of the same nature - very dif=
-ferent is Linnen when worn long it favours the production of Lice & pestilential diseases. Poisons as I mentioned formerly are a re=
=lative term. They produce diseases 1st according to the part they act upon 2d According to the dose they kill by bringing the whole sys=
=tem into sympathy from inflammation in the part to which it is applied. Vegetable poisons are numerous as Night shade, Cicuta Belladona Strammonium, Laura Cerasus. Monks Hood, Buck Wheat when young it kills pigs. When used as Greens by people it acts by producing great sensibility in the Skin &c. I have heard people under its influence complain of the air being cold when to others it appeared warm There are some less deadly.

Mineral Poisons as Arsenic & Acrial as the samoon winds Oxial acid &c some suppose these poisons to produce death by ac=
=ting on the muscular system; some by its destroying the living principle. I am disposed to think that different poisons act upon different parts of the body accordingly as they act directly

or

or indirectly For instance some act 1st Solely on the mind. This shews the independance of the mind with respect to the body & that they act upon the body by sympathy or Juxta position 2d Some produce death suddenly by acting on the Brain as Stram=monium 3d Some on the Nerves 4 Some on the Sanguiferous sys=tem as the Viper 5 Some on the Lymphatic system 6 some on the skin 7 Many act on the Stomach & Bowels 8 Some act on all the systems mentioned as Opium & the Contagion of the Plague 9 Some on the Lungs as Oxial acid it produces no effect on the nose nor till it enters the lungs 10th some act on the muscular fibres by producing palsy 11th Some on the Blood by changing its quality as those of venomous animals &c Having established these actions of Poison, we proceed to enquire how they act in producing death. Wool destroys the motion of Electricity. Wax that of the string of a Musical instrument & a string tied tight round a bell its motion or sound. These act by depri=ving the bodies of the power of communicating Electricity & sound. Then may not poisons act by depriving the part to which

which they are applied of the power of conveying impressions
or emitting vital motions
& performing their natural action? In short they appear to
induce death by inducing inactivity in the system to perform
its functions Perhaps they act by destroying the union of dif=
=ferent parts rendering them incapable of emitting their ner=
=vous actions; or perhaps they act by inducing an indirect de=
=bility incompatible with life. There are certainly many slow
poisons.

## Lecture 40th Jan: 3d. ——

Worms. They are found in every part of the system 1st Liver
2d Bladder 3d Throat. I knew a sea Captain who used to discharge
them from his throat by coughing 4 They have been detected in
the frontal sinuses 5 Brain 6 Alimentary Canal which is
their most useful situation. Kinds of Worms are 1st Round
worms or Lumbricales 2d Ascarides 3d Tinea or Tape worm; this
last possesses many parts. How are worms formed? Some say
from the milk of the childs mother. I think it is as natural
to suppose that they are produced in Fotuses from the
liquor

liquor in which they float as from their mothers milk. I say worms necessarily exist in the body from their univer=sal presence in it. They are useful in destroying superflu=ous Aliment & only hurt by being misplaced or in too large quantities. I mean the round worm. The diseases produced by them are chiefly confined to the Alimentary Canal. They are the effect & not the cause of Fever. Mistaking the effect for the cause has produced Idolaters in Medicine.

"Just like the Indian whose untutored mind"
"Sees God in clouds & hears him in the wind" Pope.

My opinions have derived great support by hearing they were adopted by the late Wm Hunter Dr Saunders, & many other e=minent Physicians in Europe. They are the cause of chronic complaints they produce many anamalous symptoms in acute diseases. Worms & the Catamenia should never be lost sight of the first in Children the latter in Women. Anamalous sub=stances taken into the Alimentary Canal, Lungs, Nose & Skin are not unfrequently causes of diseases as Copper, Lead, Silver

Mercury

Stones. Iron &c. Matters getting into the lungs produce disease & often death they are the out parts of the system & prevents many enemies from assailing it. Buttons Needles & Pins swal-
-lowed will produce disease the two last for many years after they are swallowed will produce disease by working in the mus-
-cles in different parts of the body & produce ulcers of the most obstinate kind. A Son of Robert Morris of this City was a long time affected with an ulcer in his groin it was at length discovered to arise from a pin which had made its way into the part. Tetanus is frequently excited by wounds which act upon the Muscles 'tis therefore a partial effect from a par-
-tial stimulus the effect becomes universal by sympathy your way therefore to cure Tetanus must be if brot on in this way to throw the excessive excitement of the Muscles into the arte-
-rial & other systems & thereby produce an equilibrium. Shot & Balls produce diseases. I have known shot in the Muscles to produce Mania many years afterwards. I was once called to a Boy who had frequent spells of Mania from the imita-
-tion

=tion of shot working out of his foot which had been lodged in it some years previously at school. I saw him at the commencement of a fit extracted the shot & he was imme=diately cured. Paints & Pomatum applied to the external surface will produce disease as Head ache &c owing to the lead these preparations generally contain. Costiveness will produce Head-ache from pressure on the bloodvessels the descending Aorta par=ticularly it also produces Piles Inflammation of the bowels Sup=pression of Urine Ruptures of every kind. Fevers &c.

Retained Excretions as suppressed perspiration produces dry skin Sneezing Cholic Fevers Diarrhoa, Catarrh Lassitude &c Obstruction of bile produces Costiveness Jaundice Inactivity &c Anger I think produces strength by promoting an effusion of bile into the duodenum it acts as a stimulus to the parts in contract and to the muscles by sympathy it also produ=ces imperfect vision as every thing appears yellow. The ef=fects are gall stones viscidity &c The cure of Yellow Fever de=pends greatly on restoring the secreting & excreting Functions

of

of the Liver - it differs from the bilious fever in this that in the latter there is a preternatural effusion of bile into the intestines - in the Yellow Fever the biliary ducts are obstructed. Are there any diseases from the retention of Semen? I answer no unless there be an uncommonly strong venereal appetite in which case it will produce many severe symptoms at length Mania & Death.

Obstruction of the Menses will produce Dyspepsia Hysteria & many other diseases. Motion & Rest, Sleep & Watchfulness in excess will often produce diseases - more of Motion hereafter. 2° Rest. Man ever prone to activity must be subject to disease when rest in excess takes place 3 Sleep produces many diseases 4 Watchfulness is a relative term 'tis owing to the action of some stimulus on the mind as Love, Grief, Debt, Cold feet &c Haller relates many remarkable instances of morbid watchfulness. Dr Boerhaave lived 6 weeks without sleep & a woman passed 40 days & nights without sleep immediately before being delivered of a child. It is relieved sometimes by

depletion

depletion. It is remarkable that 8 or 10 drops of L: Laud: procures sleep sometimes when an hundred would not, & I have known a dose of Asafetida produce sleep when opium in any quantity would not have any effect.

Improper Exercise of the Faculties of the Mind. Understanding upon health is a stimulus when exercised in a great degree it consequently involves the memory & produces Dyspepsia, Costiveness Mania & they are worse when accompanied with the midnight lamp. Strong Passions, Obstruse subjects the disproportion of the difficulty of the subject to the age and abilities of the person — Dead Languages are certainly too strong stimulants on the mind or excitability of a child Hence they debilitate the system & lay the foundation of disease 'tis just like cramming a new born infant with bacon & chickens instead of its mothers milk. To lose health by study is a sign the person is engaged in one that is disagreeable. The effects of the Passions on the Body are justly & groundly explained by Dr Brown this alone without any other part of his work is sufficient to intitle him to the affections of Mankind

=kind. Are there any diseases produced by a want of understanding
No. Passions - these are Love & Grief the one Acute the other
Chronic - Both sources of diseare.

## Lecture 41st. Jan: 4th. —

Love acts differently as Combined with Fear &c. It disposes to pensiveness Melancholy, Hypochondriasis &c A Person loves most when rejected by his Dulcinea. In this case the stimulus of desire acts on the accumulated excitability occasioned by shame & despair. Joy, a powerful stimulus so much so as to produce death in many instances. It sometimes produces Madness &c Political Joy most apt to produce death. A Doorkeeper to Congress in time of the late war, an old man, died suddenly from an excess of joy on hearing of the defeat of Cornwallis; there are instances of joy producing suicide, a sudden increase of wealth by producing an excess of joy will induce death. Joy is most fatal when it acts upon fear. Anger - it was implanted in our systems for useful purposes - 'tis a powerful stimulus it produces Turgescence of the vessels

vessels. Increase of Saliva Epilepsy suppression of Speech. Apo=
=plexy & Death, when combined with Fear it produces Paleness,
Tremors &c. Grief. The duties of our profession must frequently
subject us to this state of the mind. It has been known to ter=
=minate in Asphyxia & Death. It is remarkable that when it at=
=tacks people troubled with Hysteria it is changed into Hypochondria=
=sis! In a small degree it excites a flow of tears in a greater degree
they refuse to flow. It produces a change in the Countenance thick=
=ens the lower lips, Wrinkles the forehead &c In a certain degree it
produces sleep by reducing the system to the sleeping point.
Fear. does not exist unnecessarily it defends us from danger Epi=
=lepsy. Mania Asphixia Death &c. I have particularly observed
thirst to attend fear in the flying soldiers in the late war whose
continued cry was Water. Talking of the Subject which pro=
=duces fear aggravates it because we know children walking
past a grave yard will not be afraid unless it be spoken of
I have known Asthma excited when persons labouring under
it have been interrogated concerning it. Hence an important

hint

Sent to Physicians. Fear has changed the hair grey in one night - it has even caused people to destroy themselves. Some Chinese soldiers threw themselves into a River to avoid the sword - it accumulates the excitability hence the Strength of Cow=ards. It will render the hair erect on the head & I have read of an instance when the hair fell off in a very short time from the effects of fear. It acts on the mind by expelling all other pas=sions. It is influenced by debt. In producing all the diseases of the nervous system debt is a real evil. On the desire of life fear acts with double force.

Terror is of a compound nature. Envy acts like a perpetual blister or issue. Many of the low diseases of high life are brought on by this passion

Ambition does not often produce disease unless from disap=pointment 'tis an inflammatory fever of the mind.

Avarice. Many have died to use the common expression in debt to their backs & bellies. It abstracts from a Country a Neighbour=hood, Family Relations &c. The following is an epitaph written on an old

man

man. "Here lies his Grace in cold clay clad
"Who died for want of what he had".

There was a Patient in the Hospital of this City afflicted with a Mania brought on by the reflection of letting his House at a low rent just before House rent rose considerably.

Indulgence of the Venereal Appetite. When indulged in a lawful manner it seldom produces disease. Old people are seldom hurt by cohabiting together. But old Men are often hurt by cohabiting with young women. Lacivious ideas are excited by prints, Paintings & Consideration which rouse the appetite into action. They excite to onanism which produces a number of the most distressing symptoms I ever met with, as Impotency, Dyspepsia, Gonorrhoa &c. ——

Different Situations. I formerly observed different states of society. they are divided into Barbarious. Civilized & Savage, each of which have different diseases (vid: 1 Vol: my Inq:) ——

Different Governments. Suitability & Sensibility shew themselves in different governments. The influence of Freedom will

shortly

shortly establish an equilibrium of Irritability & Sensibility. This is rapidly taking place in France. Freemen with Liberty to the whole world or Family of mankind - Errors are opposed to errors & Truths harmonize with each other. Physicians should be Freemen. You will scarcely ever hear of an eminent Physi=cian who is not a Republican & a Physician who is not a republican holds principles which call in question his ignorance on certain laws of Medicine.

Different Religions. Religion is as necessary to Man as pure air to respiration. Christianity is most friendly to health Every doctrine which is unfriendly to health ought to be rejected as false.

## Lecture 42d. Jan: 5th.

Different Employments. The first employment for man was Agriculture. Farmers most healthy. Carpenters are generally observed to be long lived from a steady employment of body & mind. Farmers & Carpenters are subject to fevers & accidents. Soldiers to Fevers Dysentery & Chronic Rheumatism.

Sailors

Sailors to scurvy &c. Slaves are subject to diseases from waiting on their Masters in Cold wet &c Mechanics are subject to diseases Weavers are particularly subject to Dyspepsia. The posture of Tailors & Shoemakers invite to diseases. The Gastrocnemii Muscles of a Taylor & Glutia Muscles of a Shoemaker are longer than those of others. Bakers from being in damp cellars &c are subject to pulmonic complaints. From accurate observation made in the City of London it has been found that the life of a Baker was three years. Smiths of every kind from their exposure are liable to inflammatory diseases the metals worked among also disposes to disease as Lead &c Studious people are subject to Headaches Dyspepsia &c Hence dyspepsia has been called morbus Studiosorum. Judges are subject to Calculus from a long retention of Urine. Clergymen to Gravil, Consumption &c Lawyers & Physicians from the exercise they undergo are not so subject to diseases. Country Physicians are subject to Costiveness, Piles Rheumatisms Gravil, Fistula &c. Scriveners are subject to Palsy in their right hand. Different Amusements are hurtful to

to the syotem from preparing to partake of them By standing a long time before a looking glass or under the hands of a Barber, Improper change of dress the air of crowded assemblies. From this cause I think contagion often arises as of Influenza Ca=tarrh &c Dancing is hurtful I knew a person die suddenly of an apoplexy leading down a country dance. I knew an instance of an Aneurism in a Lady from this cause. The Theatre pro=duces nervous diseases. Tragedies produce virtuous sympathy; but I never knew them excite to produce virtuous actions. The mind suffers from a regurgetation of the passions. It has been said that Theatric performances excite Virtue & Benevolence. I deny the assertion the Lady who this moment weeps over a Tragedy Noval or Romance in the deepest distress, will the next moment deny her servants the commonest necessaries of Life & even drive from her door the most miserable beggar with haughty Indignation. It is easily accoun=ted for, they produce such violent actions on the mind as to ren=der it Callous to slighter impressions — as a Stomach which has been used to ardent spirits, cannot feel the impressions of small beer

Acute

Peculiar Customs - 1st Drams in the mornings to act as they say, as an Antiphlegmatic or Antizygmatic - 2d Wine & Bitters before dinner is a very pernicious custom, they are both very in=jurious 3d Women lying recieving visits; in the first place she suffers the fatigue of 2 or 3 hours spent in dressing to recieve com=pany then sitting 5 or 6 hours more, & at the same time exposed to the clangor of 12 or 15 female tongues, each having its proportion of Noise. 4 Tolling of Funereal Bells never fails to sink the spir=its of a patient; this custom should certainly be banished 5th To=bacco if it were possible for one of our inhabitants to be transpor=ted to one of the Planets & there say we cultured a plant which is disagreeable to the taste that produces Vertigo Dyspepsia &c he would certainly not be believed. In no one instance is it possi=ble to view man in a more degraded state than in the use of To=bacco - 'Tis a stimulus, 'tis similar to ardent spirits. the use of it is called for in Studious people Sailors &c. Fear will excite to the use of it. 'Tis also called for after dinner. Whenever you hear a man call for a Segar after dinner you may be sure he has

has eaten too much. Snuff is to the nose what Cayenne Pep-
-per or ardent Spirits are to the Stomach. The appetite for To-
-bacco is wholly artificial 1st It impairs the appetite 2d It pro-
-duces indigestion from a waste of Saliva 3d It produces Ner-
-vous diseases. I have seen two cases of Epilepsy brought on
by Segars, One of consumption from the same cause. Snuff pro-
-duces tremor; in Dr Pringle it destroys the memory. The want
of it after being long accustomed to its use produces many vio-
-lent symptoms. It destroys the memory. It has in some instan-
-ces produced uneasiness bordering on insanity. This weed would
assist the intellectual faculties but will prevent no contagion. It
may be good to produce emaciation. Segars are worse than pipes,
because the smoke comes into the mouth hotter & the Tobacco is
in contract with the Mouth. They destroy the Teeth give the breath
an offensive smell impair the voice gives the complexion a dus-
-ky appearance, produces cancer on the lips &c & the use of it
excites thirst to be allayed only by wine or ardent Spirits (still
worse.) After finding it is not natural to man we are naturally
led

Filial diseases

led to enquire into its use. It is the food of a single animal the vile Rock deer that roam on the mountains of Africa

Unhealthy Ancestors. The diseases derived from Ances=
=tors are divided into 1st Congenial 2d Hereditary. The Conge=
=nial are 1st Small Pox 2d Venereal disease 3d Measles 4th
Plague 5 Hair lip 6th Imperforated anus &c Hereditary depend
on shape & temperament 1 Consumption which is generally de=
=rived from the Father 2d Madness which is generally derived from
the Mother. General Montgomery who fell in the late war with=
=in the walls of Quebeck, used to wish that he might be gra=
=tified in three wishes. 1st That he might have no children 2d
That he might die before he arrived at the age of 50 years 3d
That he might die suddenly. Tis remarkable that all his wishes
were gratified. His parents were all subject to madness at the age of
50 He therefore wished to die childless that he might have none to
entail so dreadful a disease on his children - to die before he was
50 to avoid the disease himself; to die suddenly that he might
not feel the pains of death I never knew but of one instance of

mDuff

madness appearing before Manhood. Gout, Hysteria, Hypo=
=chondriasis Scrophula, Leprosy &c are all Hereditary— 'tis very
remarkable that there diseases will disappear in the second and
appear in the third & fourth generations. Head ache is also he=
=reditary. Tis therefore necessary Gent: that you should enquire
into the diseases of your Patients Ancestors; particularly if
they laboured under chronic diseases. —

## Lecture 43d Jan: 6th

An injudicious confidence in False Systems of Medicine.
The operations of Quacks & Nature have produced their diseases— 1st
False systems of Physic from Hippocrates down to Dr Brown have
all slain their thousands; except where Physicians of Judgment have
corrected in their practice their erroneous principles. The Physician
will perhaps be more successful who borrows a little from each
of them. Many hundreds died from living on a vegetable diet
after Dr Cheynes publication on regimen & many hundreds of chil=
=dren have been purged to death for worm fever which had no ex=
=istence

existence. Many have died from taking Opium supposing it to be a sedative according to Dr Cullen; while equal as many have died from almost an invariable use of it according to Dr Brown whose diseases are almost all of the asthenic kind; he always blended the predisposition with the disease; they can-not exist together, there may be an inability of the Muscles to perform their proper functions; but there is always a morbid strength in the Arteries. There is such a thing as Truth in Medicine although I may founder on an Ocean of uncertainty during my life I doubt not truth will be the firm support of future phy-sicians. I believe the time will yet come when two years will be sufficient to acquire a knowledge of Physic or Medicine. I am sure those who now attend to the present system of medi-cine will know as much in two years as their predecessors did in nine in those diseases which we now fail of curing. I must think for myself that it is because I have adopted a false theory. Some will ridicule theory in Medicine 'tis absurd, all must have theory & they who condemn it have it most but they have

the

the most false theory. Medicine will never arive at perfection by empiricism. A false system of Medicine resembles a cabinet with 20 different apartments each of which has a seperate Key; while a true system resembles a cabinet with the same num-
-ber of apartments but with one Key to unlock the whole. I recollect a dialogue between a Sword & a Rum Hogshead wherein they were contending for which had destroyed the most. I think if a quack had stepped in he would been able to prove that he had slain more than Sword Rum Hogshead & Pestilence altoge-
-ther 2° An injudicious confidence in the operations of Nature (for a full account bid: Vol: 1st & 2d of my Inq:) I will only observe that in this enlightened age nature is the Pagoda of many Physicians 3° Quacks have certainly destroyed their thousands-

The Imprudent or Habitual use of Remedies without or with the advice of a Physician 1st Purges from habitual use dispose to Costiveness Aloes as a purge dispose to Hemor-
-rhois. Salts to a debility of the Bowels &c 2 Vomits to Dys-
-pepsia a morbid secretion of bile - Ruptures of all kinds &c

&c

altho they be good when properly directed 3° Bitters induce indirect debility Dyspepsia Gout &c they are good when properly used but I know of no one bitter that is habitually safe. I have known Camomile bitters induce Vertigo Exercise is the best of all human Tonics combined with a well regulated diet 4 Nitre disposes to dispepsia Cholic &c 5th Opium to Tremors Debility Drowsiness &c 6 Bloodletting habitually as it is often used in the Spring disposes to plethora, Apoplexy. Diaphoretics improper 8 Cold Bathing has induced Homorrhagies &c 9 Deliriium is a powerful remedy & as often applied wrongfully as rightly. In predisposition to disease it has often been of immense service. But when a morbid excitement prevails in the system I have seen it produce deliriium & increase every symptom. The same remedy therefore will kill & cure 10 Diet Drinks 11 Exercise in excess is certainly hurtful 12th Quack medicines of all kinds have swelled the bills of mortality. Godfreys cordial have destroyed many children. Turlingtons Balsam & the famous Poet Goldsmith was killed by Tames's famous purging Powder drops

drops. I have seen three drops of L: Laud: in a case invari-
-ably produce Cholic, Strangury &c this is the care with many
other medicines in particular persons. 'Tis owing to a peculiar
Idiosyncrasy in certain constitutions. Hence Gent: you will not
blame your Brethereen in Medicine.

*Sympathy & Antipathy.* This Gent: is a thorny subject.
Gaping, Laughing, & Weeping from sympathy have spread through
a company. Sore eyes & Convulsions are often contracted in the
same manner. Of Convulsions there was a remarkable instance
at the orphan house at Haarlem where a child was seized
with Epilepsy & from it a number took it. Stuttering is often
communicated in the same manner without the conscious-
-ness of it. with a thousand other instances of a similar na-
-ture. The muscles are put into action involuntary. How shall
we account for these facts. I answer man is an imitative
animal. Dr Johnson when a boy at school suddenly left
off play from an impulse that his Father was dead. This
however strange it may seem is a fact! For a letter which

&c

James the First was born with an Antipathy to a drawn Sword—
And Peter The Great with an Antipathy to Water—

He recieved a few days after convinced him that his Fa=
=ther was dead. & died at the very moment. This fact is cor=
=roberated by many other similar ones. I have often endea=
=voured to disbelieve any such things; but facts make me
believe tho' I cannot for it. Dies Docent. There is a par=
=ticular attachment to Relations in the last hours of life
We then see Fathers forgive their Children who have highly
displeased them & even remembering them in their wills &c
I am of opinion that there is a secret sympathy in Souls
that we die at peace with this world & that we will be all
friendly in the world to come.

Antipathies. They are often congenial being born within
us there is a congenial antipathy to Water, Swords, Dogs,
Cats &c this may be caused by their efflavia there is another
caused by association of Ideas. I had an acquired Antipathy
to Boiled Chesnuts which lasted from the 7 to the 25 year
of my age. There are associated Antipathies. I mentioned as=
=sociation of Ideas it is important to understand it. Associat=
=ions

The Arterial plethora prevails until about the 36. or 40th
years of life. after that the venous.

From the greater proportionate size of their heads, ~~Infants die~~ consequent greater determination of blood to that part, Children are peculiarly liable to Tinea Capitis, Hydrocephalus Internus &c More Male children die than Female. The former have more vitality, but the latter more tenacity of life.

Fewer Men die between the 40 & 57th year of life than at any other periods.

=ations of Motions are explained by facts for when we are go=
=ing to bed we make water tho' we have made it but a short
time before &c Dr Darwin has suggested this principle and
applied it in the most judicious manner 'tis this explains
periodical diseases, as Epilepsy Intermittents &c by keeping a
patient under an Intermittent, in a dark room the Ague
has been destroyed; because the association of light was ob=
=structed. Opium by bringing on new Impressions & des=
=troying Associated ones has also cured Agues.

Accidents Vid: Bell. Tis remarkable that diseases are often produced long after the application of causes. Hence I never view lightly a stroke on the Head how trifling so=
=ever it may appear.

Time. In Old Age there are its peculiar diseases. For an
=account I refer you to my 2d Vol: Eng: In addition to these
I have acquired two facts by enquiring of very old people
1st That they are never known to have any complaint of
their Stomach. there may be good appetite without a healthy

Stomach

stomach both are necessary to influence Longevity 2d That more Women than Men Live to an Ordinary old age as 70 or 80 but more Men than Women to an extreme old age.

This Gent: finishes the remote causes of diseases. We now proceed to enumerate the Predisposing causes.—

## Lecture 44th Jan: 9th.—

Predisposing Causes of Diseases, which are Na=
=tural & Artificial. 1st Those which are natural occur in 1st Different Ages as in 1st Infancy from 1st Disproportion of the Head to the Bo=
=dy which causes a preternatural determination of the Blood to that part & predisposes to Hydrocephalus Internus &c 2d The opening of the satures & Cartilaginous state of the Cranium to Hydrocephalus externus &c The Colera Infantum is only a bilious Fever determined to the Bowels from their great ex=
=citability. Biles which are so troublesome to children in warm weather are caused by the action of heat on their ex=
=tremely irritable skin 3d Excess of excitability there is more excitability

excitability however strange it may sound than sensibility hence convulsions & diseases of the stomach & Bowels 4th Dentition. This not only produces painful swollen Gums. Fretfulness. Convulsions & Cut I have known it to produce stellings in the glands of the Groins! & Gonorrhoa. 5 6 7 Passions 8 Worms 2° Childhood & Puerility. The diseases of infants nearly apply here. Excitability still predominating. There is great mortality of children under 7 years of age owing to an excess of vi=tal matter. It has been computed that half the children that are born die under 7 years old. that more boys die than girls owing to their systems containing more excitability 3 Puberty to 1st Fe=bile diseases of an inflammatory nature 2° Phthesis Pulmonalis. Ca=tarrh, Homorrhagies, 3° Dyspepsia 4 Hypochondriasis 5 Swelling behind the ears & Pains in the limbs & Joints called growing pains 6 Venereal disease from an increased venereal appetite. Females at this age are predisposed to the same diseases except the venereal. In addition to these they are predisposed to a vi=tiated appetite. Clorosis Fluor albus &c—

4th

4th Adolescency & Manhood to Febrile diseases which gen=
=erally fall upon the lungs hence pulmonary Consumption &c
5 Arterial Plethora prevails in Youth Venous in old age 'Tis
in the strife between the Arterial & Venous Plethora we discover
headaches &c at the age of 40 the system is regular & healthy - here
like the Aolian harp with a regular breeze it is always in tone.
In the translation of the Empire from the Arteries to the Veins, the
Vena Portarum is the first that suffers from its load - hence at
this time we observe complaints of the Liver to occur as Melena
or an Hemorrhage from the Liver Dysuria &c. Palsy Apoplexy &c
are consequences of venous Plethora 6 Old Age - 1st The eyesight
begins to fail hence we first begin to die in the eyes - 2d The Sphincter
of the Bladder is relaxed hence the frequent desire to make water. You
may always tell a mans age by knowing how frequently he makes
water. From 57 to 63 the system is predisposed to Cholic &c from 63
to the close of life it gradually decays 'tis here a second childhood is
produced hence there is a predominance of excitability hence 2 or
3 glasses of wine will intoxicate a Man who used in the prime of

of life to drink as many bottles without their producing this ef-
fect. Between 80 & 90 there is an excefs of stimulability hence we
here feel the slow strong pulse & here there is a disposition to inflam-
matory disease. Dr Choviet & Dr. Franklin between 80 & 90 di-
ed of acute inflammatory diseases the former of an Hepatitis the lat-
ter of a pneumonia. The fluids of old people become acid - hence in
old age trifling sores terminate in cancers & Bruises in Mortifica-
tions. Muscular weakness attends old age - hence the shaking
Head & Hands - in the Alimentary canal costiveness

ii In difficuet conditions of the system as in ~~/~~ different temperaments
they seldom develope themselves till after puberty; by a proper man-
agement at the change the diseases incident to them may be pre-
vented. they are 1 Nervous which disposes to Madness, Hysteria, Epi-
lepsia &c 2d Sanguiferous to Fevers &c 3d Bilious to Jaundice Cholic
&c 4 Phlegmatic - in this there is a deficiency of excitability in the
Nerves & Lymphatics. Medicines operate differently on people as
they are predisposed to the above different Temperaments. The Tem-
peraments Gent: should never be lost sight of; as they explain the
causes

causes why the same remote causes produce diseases in differ=
=ent parts of the system & of different appearances & why Phy=
=sicians should never prescribe for the name of a disease 2ᵈ Dif=
=ferent conditions of the system in single & maried life. 1 Celi=
=bacy is not without its diseases. Remember Gent: a Bachelors
Life is a good breakfast a tolerable dinner but a very bad sup=
=per According to Dr Dienman more single Males & females die
than married: Newly Married men are liable to disease from cau=
=ses too obvious to mention not so with women. The desire of Progeny
in Men arises I believe from vanity & a fear of shame. In women
these desires are truely great. I have often seen them with tears in
their eyes because they were barren. I know a barren wealthy Lady
in this City who has often declares to me that she would exchange
her life for a beggars barely to be pregnant.

3 Pregnancy. Contagious diseases with pregnant women produce
serious effects. Small pox always more severe; Plague & Yellow Fe=
=ver unless Bloodletting be used will produce abortion &c Pregnancy
disposes to puerperal fever - Cholic, Vertigo, Mania &c Suckling

children

children disposes to Pulmonary Consumption &c. A sudden Abstrac-
-tion of the child from the breast of a weakly woman is dangerous.
I lost a patient by it. I advised her in her illness to continue the
child at her breast; but her relations were oposed to it & an old
half bred Doctr. who is always the worst visitor of the sick per-
-swaded her that it was the cause of her complaint. She removed
it & died in less than six months after with what is called the
galloping Consumption. In such cases the plethora of the breast is
determined to weaker parts. Suppression of Milk to Schirrous Can-
-cers, swelling &c 4th The period of the cessation of the Menses
is marked by diseases. the system becomes plethoric. the diseases
at this period may all be prevented by occasional bloodletting
Laxatives low diet & exercise. I beg leave Gent: to refer you to
Dr. Fothergill. his is the best treatise I know on this subject 5th
Deformity or configuration of the body. Tall people are predis-
-posed to diseases of debility. Dwarfs are generally short lived
the only exception I know to this was a dwarf brought from Ger-
-many to England by George 1st He lived to be 80 years old.

Congenial

Congenial Weakness disposes to disease. Those who grow very fat before the age of 40 are generally short lived. Large head & short necks dispose people to Apoplexy &c Narrow Chest to diseases of the Chest. Crooked spine to complaints of the Bowels, Many say that deformity of particular parts disposes people to Venereal Appetite. Seven months children are generally weakly 2° Artificial causes are all linked - they all proceed from one cause III Occasional Causes, they act on the predisposition & produce diseases.

## Lecture 45th. Jan. 10th. ——

We now come to an important & difficult Subject. ——

IV The Proximate Cause of Diseases. They are the last link in the chain. They are the diseases themselves. All diseases (as they are called) have the same proximate cause, consequently there is but one disease. It is a morbid excitement a deranged or irregular action. There causes are General and Partial 1st The General causes affect the whole system directly or indirectly. In General diseases we divide the body into seven

systems

systems; all these sympathize with each other, one being af-
-fected affects the whole. I was first led to observe this sym-
-pathy from 1 Diseases which were thot local travelling from
system to system - 2° Specific Stimuli - as Sulphur on the
skin Mercury on the Gums & 3° The action of different medi-
-cines for instance Bark acts primarily on the Arterial system.
Gentian & Columbo on the Stomach & Alimentary Canal, Asafo-
-tida on the Nerves - Stramonium on the Brain - Oil of Amber
on the Muscles, Mercury on the Glands & Lymphatic system
Opium acts upon all the system particularly on the Brain - Hence it
has been called Medicina Mentis & Medicines relieving one
one part & by sympathy other parts - Truth's like matter in-
-destructible However diluted & will at last become useful 1st The
Body is generally affected thro' the medium of the sanguiferous
system. The Arteries are the outports of the body they terminate
on the external parts there they receive the first which are called
Fever. I now refer you Gent: to my 4th Vol: till I come to
treat more fully of this subject - 2° The Nervous system is the
next

next Carrier - in this we include the Mind, Brain, Nerves and Muscles. 1st Tetanus is a disease of the Muscles - so far from its affecting the Nerves that they are generally insensible to it. Debility is evidently the predisposing cause of this disease - 2d Chorea Sancti Viti - a disease of irregular action 3d Cramp occurs from indirect debility as in swimming &c from violent exertions - from direct debility as in Cholera - Morbus 4th Convulsions occur sometimes in the beginning of Fever & from Dentition 5th Hooping Cough - a disease of the Muscles of the Larynx and Glottis 6th Singultus - a disease of the Muscle called diaphragm Bloodletting here Gent: is the remedy 7th Asthma is a disease originally of the Muscles I include here the Cynanche Trachealis spasmodica. Connected with it is Angina Pectoris. 8th What shall we say of the Heart? connected solely to no one system' tis an acquaintance of all; tis subject to muscular disease 9th Rigidity & Contraction of the Muscles of the Neck. 10th Stattering these are all involuntary - they are divided into Tonic & Clonic Spasms - Tonic is Spasms properly so called. Clonic is convulsions

2d

2d Nerves. I exclude pain from the diseases of the Nerves 'tis only a symptom 1st There is a morbid sensibility in this class 2d There is a morbid insensibility in Leprosy 3d There is an ex=clusive connection between the Nerves & the Brain. The Fidgets is an exclusive disease of the Nerves. 4th For a particular detail of the dis=eases of this part I refer you to Dr Darwins Zoonomia 3d Brain is affected with Vertigo, Low spirits - first stage of Hydrocephalus In=ternus. Those which affect different parts at the same time as 1st Palsy which affects the Nerves & Muscles 2d Hydrophobia is originally a disease of the Muscles tho' thro' there it affects the bloodvessels Glands &c 3d Hysteria affects the Nerves, Muscles & occasionally the Bloodvessels 4th Hypochondriasis affects the Nerves Muscles & some=times the brain & Bloodvessels - 5 Epilepsy the same. I consider Hys=teria Hypochondriasis & Epilepsy as I would Fevers; only different states of the same disease - they alternate with each other. How often do we see Hysteria to day, next day Hypochondriasis in the same patient - How absurd therefore the Nosological divisions & subdivisions, Epi=lepsy & Hysteria are both connected with Tension in the Fibre

or

or Arterial system C Apoplexy - a disease of the bloodvessels & Nerves - 'tis certainly of dangerous consequence to distinguish it into serous & sanguineous - tis Acute in Adults - Chronic in old age 7 Syncope - a disease of the Nerves & Bloodvessels - B As=
=phyxia is nothing but a chronic syncope. In Asphyxia the Action of the Brain - Nerves & Muscles are suspended - this state may con=
=tinue several days without the extinction of life it then gets the name of Trance. If man could be removed so suddenly into a state of cold as to render every System inactive without a waste of their powers; I believe they might remain there & be brot to life many years afterwards. Mania affect the Nerves Brain & Muscles. I shall I hope hereafter be able to prove to you that it is a disease primarily of the Arterial system. There is but one disease of the Nerves. They are all but different states of the same disease. How absurd therefore the distinction of Nosolo=
=gists.

## Lecture 46th Jan: 11th

3d Those which affect thro' the medium of the Stomach & Alimen=
=tary

-tary Canal. Dyspepsia is a primary disease of the Stomach & Alimentary Canal produced by many causes. Thro' the me-
-dium of the Stomach many Fevers & Convulsions are produced. Brain is also affected thro' it, as from the use of Strammonium. Dysentery is primarily a disease of the Arterial System it cert-
-ainly particularly affect the bowels - it seldom affects the Ner-
-vous system but is connected with the Glandular system. — Cholic arises from Gout, Hysteria. Stimulating substances recie-
-ved into the Bowels as Lead &c. when it arises from Hysteria & Gout it is primarily a disease of the arterial system. When from stimulating substances it is a primary disease of the Bow-
-els. Cholic affects the Muscular & Glandular systems. Hence we often find Jaundice follow this disease. Tympanites is a dis-
-ease of the bowels 4th Those which affect thro' the medium of the external surface of the Body. Small pox is primarily a disease of the arterial system it affects the skin, Salivary Glands, Bowels &c. Scarlet Fever a primary disease of the skin Cynanche Maligna affects the Glands Bowels &c Chicken

pox

pox, Nettle rash, Measles. Pemphigus are all diseases of the skin. Sores affect the skin when suddenly healed they affect the Arterial system & alimentary Canal. Itch when suddenly repelled, has produced Mania Epilepsy &c Erysipilas affects the skin. Leprosy affects the Prepuce Testicles &c. from circumci=sion the Jews seldom have this disease. Elephantiasis is a higher degree of Leprosy. I cannot dismiss this subject Gent: without remarking that all these diseases are connected with the Arte=rial system. Fevers always produce more or less affections of the skin. This view of the subject leads us to consider all those diseases as from one cause. If we can concieve Dysentery as be=ing a Febris introversa - why may we not with as much propriety call diseases of the skin Febris retroversa? Hence Gent: we are lead strictly to examine the Arterial System. Anthrax is a dis=ease of the Skin. To these I have only to add the Affections of the skin from certain poisons as Strammon: Salmon: & 5th Vir' the medium of the Lymphatic system & Glands. Al=tho' dropsy may in some few cases be a disease of the Lymphatic

system

system: yet I am led to believe that in nine cases out of ten it is primarily a disease of the Arterial system. Diabetes Rickets Scrophula &c are believed to be originally diseases of the Lymphatic system. I am satisfied however they are pri=
=marily arterial diseases. They certainly affect the Lympha=
=tics & Glands. The Venereal disease is beyond all contro=
=versy a Lymphatic disease 6th Those which affect thro' the medium of the Blood. There are limited some few poisons act primarily upon it as the Viper &c. Scurvy has been supposed one of this kind but I contend it is an Arterial disease. 7 Those which affect thro' the medium of the se=
=creted fluids. Acid Mucous will produce Diarrhoa. Acrimo=
=nious bile & Inflamed Kidney from calculi produce Fever.

The Arterial System is the eminent part of the body & the blood the Ocean on which every other system trades. Con=
=sider therefore a disease as a Ship on the Ocean in a boisterous state always therefore keep an eye on this ocean. 'Tis happy for us we can view this ocean thro' the pulse. 1st Of the Translation of

diseases

diseases to different parts of the same system & different sys-
-tems. Rheumatism will be translated to the Arterial sys-
-tem producing a Fever to the Throat producing Cynanche Tra-
-chealis Humoralis from joint to joint & from tendon to ten-
-don. Tis all but one disease, Here again we see the absurdity
of Nosologists. Hepatitus and Pneumonia are often changed
into each other. There is but one Hemorrhagy. Tis a Fever. There
is no end to the Ramblings of the Gout. Diseases of the Stomach
& Bowels are often changed for one another. Tis important to be
acquainted with the Translation of diseases. None I hope will
deny the principles laid down. Deeply imbibe this truth Gent:
that the predisposition of all diseases is debility. The greatest se-
-cret in Medicine is to know the system in which the disease is
seated; the remedies necessary & the force with which they should
be applied.

## Lecture 47th Jan: 12th.

II The Partial or Local Causes affect 1st the skin
& hair 2° The Features of the face. The colour & Features of the hu-
-man

=man species are the first things that strike the eye of a Phy=
=sician. Dr Smith has treated very learnedly on this subject in=
=genious however as the treatise may be, still it has its imper=
=fections. No doubt the black colour of the Negro is a disease.
Many Generations will lose in a great manner the flat nose &
the thick lip. A change of colour will in a few instances take
place but such changes are very rare. Tis to Leprosy I ascribe
the colour of the Negro - my reasons for this are 1 Leprosy chan=
=ges the colour of the skin of this Dr. gives many remark=
=able instances 2d Scriptures take particular notice of it 3d Lepro=
=sy destroys the sensibility of the Nerves - now we know the feelings
of the Negro to be much less acute than our own 4 Lepers have
very strong universal appetites & how often do we not witness the
Negro after labouring all day - at night walk many miles to gra=
=tify their desires 5th The thick lip & flat nose are symptoms of Le=
=prosy 6th The woolly head - we often find plica polonica to be
symptoms of Leprosy. How do you account for the continuation of
the colour of the Negro? I answer that the Leprosy is the most

durable

durable & indestructible disease in its nature with which we are acquainted. Leprosy will appear in one & disappear again in the next generation. Nothing more happens here than in ma=ny peculiarities of different Nations as colour of the hair &c—
The leprosy is a contagious disease. White Women will contract it & become perfectly dark from lying with a Negro especi=ally if they have children by them. Of this I have heard ma=ny well attested facts. The colour in this country is perhaps the effects of an evanescent disease. The Theory which I have delivered makes the colour of the Negro a disease; if this be true instead of the barbarity we exercise towards them, should they rather not deserve our compassion? As we know the diseased have been tenderly & compassionately treated throughout the world. If then the black colour of the skin be a disease let us combine & try to find out a remedy for it. We find that in a Henry Moss & several others, nature has already begun to unfurl the banners of this disease; perhaps the change is owing to the Ab=sorption of the black part of the Rete Mucosum, or the

Rete

rite Muscorum itself? In diseases where much depletion is used we find the colour of the Negro is much changed. This co=
=lour first disappears in parts that have been much subject to pressure or attrition. This Gent: we can easily concieve of for we know that friction must assist absorption. Could we only cure this disease we should certainly erradicate much mis=
=ery from the Globe. We should also invalidate one strong ar=
=gument of the support of Slavery &c

## Chapter iii Of the Signs of Diseases.

Tis by no means the Business of a Physician to prognosticate the events of diseases it was only when the Priest & Physician were combined that it was their duty. But as we are still questioned as to the events of diseases, we shall take notice of the signs as they appear 1st In particular debility - indirect & direct - these debility's are much confounded, & I formerly observed it was unfortunate for medicine. To distinguish between these debility's we must observe the stage of the disease the habit of the patient & the causes producing it. Direct

debility

III

debility is generally partial affecting one of the systems more than another sometimes the whole. There is little danger to be apprehended from direct debility 2^d Signs as they appear in the Pulse. The pulse the primum movens & ultimum moriens of the system. Tis highly proper to seek for diseases & life in it The pulse is to the body what the dial plate & hands are to a watch. some Physicians apply themselves to the eyes some to the countenance - some to the Head & coldness of the body some to pain some to perspiration some to the positions of the body some to the states of the mind some to the degrees of thirst & others to the ap=petite, Tongue Secretions & Excretions. My system rejects none of them; but has a predelection for the pulse, & I hope my Pupils will be distinguished every where by their predelection for it. —

## Lecture 40th Jan: 13th. ——

According to the order of our Syllabus the description of the pulse should come in here, but to prepare you for my observations at the Hospital I treated of it at the commencement of the course

We should also treat of the signs of diseases as they appear in other parts of the body in this place; but I hope you will understand them much better when we come upon Therapeutics

## Signs of Death & its Proximate Cause.

Life I have formerly said is a forced state, supported wholly by the action of stimuli. No more happens here than to a violin which lays undisturbed Death happens from a too great depression of the system No more happens here than when the Violins strings are kept depressed by the fingers of the Musician. Death happens from too much relaxation; no more happens here than to a violin when its strings are relaxed rendering them incapable of emitting sound. Death occurs from a vitiated state of the fluids; no more happens here than to a violin whose strings are envelloped in Wax. Death occurs from a rigidity of the solids, in Old age it is from this cause Death then Gent: is the incapability of matter to keep up motion sensation & thought. Death is produced by wounds; no more happens here than to the violin whose strings are cut. The premature occurrence of death is mostly attended with pain; but there are

exceptions

exceptions to this rule for it sometimes comes on with the gentle-
-ness of sleep as in old age. The late Mirabeau who died with
an affection of the Bowels, declared that in one moment he felt
the pangs of a thousand years.

## Lecture 46th Jan: 16th.

## Therapeutics or the Method of Curing Diseases.

Gentlemen, having received the system in a healthy state when all
its functions are performed with ease & regularity we now proceed
to view it in its morbid state, when all or some of the functions are
carried on in an uneasy or irregular manner.

1st of the supposed power of Nature in curing diseases, for this I
beg leave to refer you to my 1st Vol: of Eng: in an Essay on the
diseases of the Indians. I am the more disposed to do this as it will
shew you I have taught the principles there laid down & of course
clear me of the assertions of those who say I have borrowed my
principles from Dr Brown. I will just make this observation,
that when you are called to visit a patient in a dangerous disease

always

always consider Nature as a turbulent Noisy Cat or Dog and before you attempt to do any thing turn her out of the room & shut the door upon her. Folly & Vice are the effects of blindly following nature. I have in classing the orders of the Materia Medica inserted that of Dr Cullen. 2° Of Medicines which remove morbid action, by abstracting Stimulus from the diseased part either directly or indirectly. These I call Sedatives; they are 1 Bloodletting 2 Purges 3 Diuretics 4 Cold 5 Low diet 6 " Lead applications &c &c. They all act after reducing morbid excite-ment by diffusing it equally thro' the system 3 Of Medicines which remove morbid action by exciting a stronger & healthy action in the diseased part of the body. These I call Stimulants they act by converting the excitability into excitement. These like water & vapour are convertible into each other. I prefer the term excitability of Dr Brown to the term sensorial power of Dr Darwin; because excitability is a quality Sensorial power a pow-er. also it implies sensation. Now we know there can be in-creased excitability without sensation. Altho' I dont agree with Dr

Dr Brown in many of his principles & practice; Yet I am disposed to do all possible homage to so great a genius as his be-=cause I think he has established a number of the best names that could be given to the Science. There can be but one morbid ac-=tion in the same system at the same time, altho' two can ex-=ist in different systems at the same time. You see I differ from Dr Brown & Mr Hunter - 'tis to me astonishing how two men of such great genius could have fallen into so great error No two diseases of unequal force can exist in the system at the same time, the former will never affect the system but in the evanescent state of the latter. Different stimuli act specifi-=cally upon different systems. Stimulants in curing a disease act by creating a new action or an action greater than the dis-=ease. Suppose the disease to be of a force as 20 the remedy as 30 now the medicines action is here greater than the disease. If on the contrary the force of the medicine were under 20 it would increase the disease. What can be plainer. If you wish to salivate & the system be in an excited state you may

give

give Mercury till you are tired without effect; abstract by
bleeding &c & your end is at once accomplished. If in an ex=
=cited state you with to unlock the bowels you may give
the most powerful Cathartics & most stimulating injection
all to no purpose take a little blood & your ends are accom=
=plished. This may be compared to weakening your Antago=
=nist before you wrestle with him A Physician being asked up=
=on what his particular success depended answered "because
he gave medicine twice as strong as his Brethren" There are
certainly instances of diseases being cured by exactly opposite
remedies. this you can easily explain For instance, in slight
cases of Yellow Fever the Bark will cure, but it is by over=
=coming the action of the disease. It will not answer in violent
cases where there is great action. Bloodletting the more certain
remedy, acts by abstracting the portion of morbid excitement re=
=maining. For the class of Stimuli I refer you to Dr Cullen.
attend to these circumstances. 2d When the excitement is ac=
=cumulated abstract stimuli in large doses. Bark by ℥ss Wine
by

by Ds 3d Do not combine too many Tonics together 4th
Use Stimuli in Rotation & when you have used the round re=
=vert the order. No remedies of the same class have exactly
the same effects. In chronic diseases intermit for a time all
medicines 5th In chronic diseases ~~intermit for a time all me=~~
~~=dicines~~ use stimuli in succession 6th Frequently change
the part of the body to which you apply medicines when they
cease to have their good effect on the Stomach or are rejected
from it apply them to the skin or inject them Glisterwise
& they will have their good effects in this manner we often see
Bark, Opium &c act 7th In giving medicine always have your
eye on the four temperaments 8 Having established the spe=
=cific action of Stimuli we are led to say that no Medicine
will act unless it be suited to the system or state of excitabil=
=ity. To illustrate this I will just observe that I know a Lady
in this City who cannot hear the report of cannon; but can
that of a musket she cannot hear people when they speak
loud but she can hear the noise of a pin when put thro' a
piece

piece of paper &c From hence Gent: we are led to know that weak stimuli will cure where more powerful ones have failed. It is because the weaker ones have been properly adapted to the excitability.

4 Of Medicine which remove morbid action in one part by exciting it in other parts less essential to life. In this Gent: I will make all Physicians subscribe to me whether they will or not. For instance they relieve Head ache by exciting Diarrhoa this is by exciting action in another part. Pain is relieved by screaming. Soldiers to relieve the pain of the bullet bite the ground as mentioned by Homer. Labor pains are much relieved by screaming Hence Dr Deweese is never called to a case of the kind that he dont direct the patient to hollow as much as the can. From this Gent: we see that we can destroy one action by exciting a stronger one. If a dog be whipped after taking a strong dose of an Emetic it will have no effect. Hence Gent when you are called to visit patients who have swallowed poi=sons which you cannot remove from the system. I would advise you

you not to whip them but to excite an eternal action either by large blisters, or hot irons or coals of fire. Does not direct debility invite to morbid action. certainly, so does idleness the debility of the mind, produce vice of every kind.

In Administering medicines to excite new actions I will deliver a few directions 1st always let your Medicines be so powerful as immediately to overcome the action of the disease. 2d If you with a blister to do good, choose a time when its action will be considerable. this I call the blistering point. There is the blistering point - the salivating point, the sleeping point, the dieting point &c 3d When you wish to excite a new action always excite it in a part less essential to life. the Bowels the Kidneys the Skin, the Mouth &c are parts in which new action should be excited 4th When your new action becomes languid, it should be kept up by new stimuli. Many stimuli become pleasurable by use as Opium Tobacco &c of course it is necessary to suspend their use for a time or give new ones because they become inert.

Lecture

# Lecture 50th. Jan: 17th.

## Of the Remedies for Preventing the Recurrence of Diseases by removing Predisposing Debility

There are stimulants of all kinds 1st In less doses than would ex=
=cite new action 2d Prefer those that are most durable, Aliment the
most proper. Frequent meals tho' small in quantity. In these cases
avoid full meals as you would poisons. Your patient will say he
has no appetite for aliments; but as a medicine it must be given.
You would not I presume delay the use of the bark or a dose of
Salts because your patient had no appetite for them? By no means
3d Accomodate the diet of your Patient to his excitability this is
of great importance. give 1st Vegetable then proceed gradually to
Animal diet 4th as a durable stimulus solid food is preferable
to fluid, salt to fresh. In exhibiting liquids give 1st Malt liquors
2d White wine, then Champaigne &c &c I do not mention spir=
=its amongst the stimulants I would use. A Man had much
better die than be respited a few months by the most detestable
Brunonian Medicine 5th Warm Bath a very useful stimulus

& Cold Bath accumulates the excitability & causes a more powerful action of Stimuli. Its use should be preceded by the warm bath. It should be begun by water moderately cold and used three or four times a day to be successful & in a warm room in winter. It should be succeeded by friction &c ℣ Excise it is of two kinds active & passive. Always begin with the passive as Friction Rocking the chamber horse Riding in carriages & on horseback - Walking this is rather a mean of preventing than curing. In using all these exercises Fatigue ought to be carefully guarded against - always accomodate the exercise to the state of the system Never let your patient exercise before breakfast because of Fatigue. Travelling is a good stimulus if it do no more the change of climate is important. by new company &c It destroys the old associations of Ideas & Motions & Cheerful company pleasant reading &c do a great deal ℣ Always advise your patient in a debilitated state to go to bed early because by sitting up they waste their excitability & are constantly inhaling impure air from burning candles &c 10 Night air should be avoi-
-ded

avoided 11th Venery to be avoided Hence to married men re=
=commend travelling 12th Let the diet be accommodated to the
weather. Flannel & cotton should be worn in all cases of de=
=bility under small clothes in Men & petticoats in Women. Eight
ligatures should all be removed 13th As a feather bed relaxes the
system a Mattrass should be preferred 14 Stimuli as Bark &
Steel should not be neglected likewise the Mineral Tonics shoud
not be overlooked as Blue & White Vitriol &c I must again re=
=peat you must always accommodate your stimuli to the state of
the system. Remember I do not say direct debility is a disease
altho it be a next neighbour. I expect in Palsy, Syncope, As=
=phyxia &c we use too powerful stimulants, perhaps gentle Inje=
=ctions at first would be sufficient. In many cases it is requi=
=site to excite action quickly For this purpose Coals of fire, hot
Irons, hot water &c are sometimes necessary: In the use of these
remedies Gent: I hope you may not draw on yourselves the
censure of the Faculty as I have done. In Gangrene as exter=
=nal Medicines, Turpentine, Fermenting poultices &c are neces=
=sary

=pany. I have lately heard of the use of Tobacco. As Internal Wine, Opium, Bark &c are certainly necessary. There are cases where V. section & purging are to be used.

6 Of Medicines which remove diseases by abstracting re=
=dundant & foreign matters from the body which offend by their quantity or Quality. As Purges Emetics Diaphoretics Diuretics Mercury Tonics Surgical Operations &c —

7 Of Medicines which remove diseases by mixing with & thus destroying matters which offend by their quality. These are very much limited. Acid may be destroyed by using Magnesia Milk & using an Animal diet. Acrid Bile may be destroyed by the vegetable alkali's & lime water - Mercury destroys the de=
=neral disease by mixing with its virus. Lightly probable De=
=mulcents by obtunding acrimony. Sulphur destroys the Itch by mixing with it.

8 Of Medicines which remove diseases by removing obstruc=
=tions. These obstructions exist in every part of the body. They are the effect of disease tho' they act by reacting on the body.

Distributants

Diobstruents & Tonics are said to be necessary, as Mercury Ar=
=senic, Bark, Steel, Cold Bath &c Exercise Local Bloodletting. Tear
have removed schirous tumours

## Lecture 51st Jan: 18th.

9 Of Medicines which are supposed to cure diseases by changing the quality of the Fluids or Texture of the Solids (vid Dr Beddoes) I altogether reject the idea that medicines act upon the fluids as being false & absurd they most certainly act upon the solids. Recollect Gent: I said pain was only a symptom of disease. Pain may be relieved when the excitement is not high by 1 Opium which acts by overpowering the action that produces pain. But when the morbid action runs high 2d Bloodletting is the certain remedy. In many cases the pain will get easier while the blood is flowing 3d Fasting 4th Cold applications are also powerful in relieving pain depending on morbid action if applied at the proper time. The pain of Piles is often relieved by the ano=
=dyne quality of cold water 6 Soft oily poultices 7 Frictions used gently

gently 8 Fear 9 Chearful society 10 Screaming Hollowing &c 11
Sulphur often acts powerfully. Does it act by conveying off the elec=
-troid fluid. It is doubtful whether it acts by adding or conducting
from 12 Electricity Metallic points have been lately introduced
by Dr Perkins - tis certain they relieve; but the pain often returns
some time after; this tho' is no objection to them for perhaps if the
Dr would use some Tonic after their application the pain might
not return. How do they act? Is it by conducting any fluid from
the body? I answer dies docent 13 Is there any virtue in animal
magnetism? It produces sleep. This however is easily accounted for
the mind being attentively engaged on one subject is worn down to
the sleeping point.

## 10 Of the Means of obtaining Longevity.

We have formerly said the system was constantly wearing itself down.
There is constantly a strife between external & internal stimuli with
this state of the body. Now to attain Longevity, I will just say we
must always adapt stimulus to excitement & excitability. In ob=
=taining it all I have previously said on diseases &c must be at=
=tended

-tended to. I also beg leave to refer you to my 2d Vol: on old age

We have now Gent finished our Therapeutics on Materia Medica. I have to lament the imperfections of writings on the do-ses of medicines. All Medicines given in diseases without princi-ples shew down right regular bred Quackery. Tis like the Sailor who on a voyage to the west indian islands threw out a great num-ber of shingles on his passage that he might by them find his way back again. away then with the names of diseases. The con-dition of the body. I repeat it, the condition of the body must be our guide. ——

I have now Gent: finished our Institutes. I have kept nothing from you. I beg you will examine my principles with scrutiny. From the Novelty of my Theory I was once afraid to hazard it to the world but when it has been so powerfully sup-ported by facts not only of my own but of my different pupils throughout the United States, I do it without reserve. There have been many objections offered but never a refutation.

Practice of

# Practice of Physick
## or
# Clinical Lectures
## Lecture 52d. January 19th 1797

Dr Rush began to treat of Fevers he took his 4th Vol: as a text book upon which he made a few comments. He observed that if a Physician went by Nosology in treating a disease he might leave his reasoning powers at home & only take his memory with him

I differ from Dr Cullen in as much as difference can be - we will endeavour to illustrate the difference by the following simile. We will suppose Dr Cullen has a house containing 100 Rooms each room having a different lock of course requiring as many keys to open them. Now my house altho' it contains as many rooms as Dr Cullens yet I can enter each room with a single key. Besides it cannot be otherwise but some of Dr Cullens keys from their being long out of use must grow rusty. Forget not Gent: that it is morbid action which constitutes disease it is not necessary that inflamma-

tion

=tion should be present for it is only the effect of disease; there=
=fore when a patient dies suddenly from the impression of a vi=
=olent stimulus there is disease but no inflammation. Impression
in one part produces sensation in another that is the part previ=
=ously debilitated of course we have many misplaced fevers. The Brain
for instance will be strongly affected with fever by its being previously
debilitated by Grief &c. Fever will appear in no other part of the
system all being locked up as it were in the Brain - the pulse in this
can scarcely inform us any thing - impress this on your minds Gent:

## Lecture 53d - Jan: 20th

We shall say a few words upon the removal of the precursors or pre=
=monitory symptoms of Fever. They are 1 Costiveness 2 Diarrhoa 3d
Dullness of the intellects or unusual sprightliness 4th Preternatural
or defective appetite 5 Loss of appetite for Tobacco in those who=
have been accustomed to it 6 Excess or deficiency of Urine 7 a Pre=
=ternaturally dry or moist skin 8 A Preternaturally warm or cold
skin 9 Headache 10 Giddiness 11 Sleep or Watchfulness 12 Dis=
=turbing

tressing dreams 13 Heaviness or a disposition to rest. The reme-
=dies for these premonitory symptoms are either

I Gentle Evacuents or

II Gentle Stimulants. ——

Those falling under the head of Evacuents are 1 a Purge 2d a Vomit. 3 Bloodletting when the symptoms rise to a considerable height though they be able to walk 4th a Sweat 5th Fasting two or three days. Those which come under the head of Stimulants are 1 General heat 2d Pediluvium 3d General gentle warm bath or a general heat by a warm bed 4 ℞ Wine or a few drops of L: Laud: 5th a pint of sage tea or warm whey which cures either by distention or by promoting a Diaphoresis. Fatigue from any cause may be prevented by the use of the above mentioned remedies. I know se-
=veral Gent: who made use of the warm bath after a long chase which effectually prevents the fatigue that would necessarily follow. The Noblemen in England will ride 50, 60, 70 or 80 miles a day to reach London in the Evening & by using the warm bath or some of the remedies above mentioned will be able to

J.

go to the Theatre &c without experiencing the least fatigue. As many of you Gent: may expect to be exposed to fatigue many times during the course of your lives let me recommend you always to make use of Pediluvium or some of the remedies above mentioned after such exposures. By the use of these means I have not only strangled a fever in myself but in Hundreds. Take notice that the remedies under the se=cond head are very improper when the disease is formed.

## Lecture 54th Jan: 23d

He now proceeded to the cure after it had formed. Here he read from his 4th Vol: & a few comments. To prescribe for one Fever & not for another is to prescribe for the name of a disease. I wish the term Nervous could be banished from our books of medicine. The more I see & consider the less I concieve them as necessary for the history of diseases. Dr Cullen considered them as Monarchs to the System I concieve them acting a much more humble part they are only door-keepers or Messengers to the Bloodvessels, while the Bloodvessels may be considered as the Centinels of the System. Lecture

## Lecture 55th. Jan: 23d.—

Tis the hardest thing in Nature to bleed a man to death provided the blood be not drawn from a vital part. Have any of you Gent: ever heard of a person dying in consequence of a bleeding from the nose, an Homorrhage from the Uterus &c I never have. Dr Young of Edinborough in his Lectures on Midwifery used to tell us that in his extensive practice in that art he never knew of an instance of an Uterine Homorrhage destroying a patient.—

## Lecture 56th. Jan: 25th.—

Tis by no means safe to trust the smallest degree of tension on the pulse when fever is settled in the brain because should effluvia take place there is no back door by which this effluvia can be re=ceived. Therefore bleed until you reduce all action or tension. I would sooner die with my Lancet in my hand than give it up while I have breath to maintain it or hands to use it— so much for Bloodletting. Evacuations of another kind are 1 Vomits. They are useful in fevers of moderate action as the bilious fever they

they act by removing the redundancy of vitiated bile in the Stomach & by raising the excitement of this organ by abstracting convulsion from the arterial System by removing the indirect debility & prostration of strength which the stimulus of bile had created. To be useful one or two should be given a day - A Dr. Cullen in N: Carolina I am well informed cured Malignant Fevers by constant vomiting for 3 or 4 days. The Cholera Morbus which is a bilious disease is cured by Nature in exciting vomiting & purging. Tartar Emetic is the best the less your patient drink to work it off the better.

2d. Purges they are more useful than Vomits they should be administered every day.

3d. Sudorifics. They are 1 Stimulating Medicines 2d Diluent drinks. they act either by distention or by diluting acrimony 3d Nauseating doses of Tart: Emet: 4th Warm Bath 5 Cold Bath 6th great weight of bed clothes is the practice of Sydenham which is the best mode of exciting sweating in Malignant Fevers - to be attended with advantage it ought to be kept up 24 hours and

Linnen

Linnen changed frequently. Sudorifics in my opinion are sel-
-dom necessary. the Lancet answers every purpose. —

4 Salivation is excited by 1st giving two grains of Mercury every
2. 3 or 4 hours 2d by Friction 3d by rubbing Mercury on the Gums
When a salivation is wished to be brought on quickly all these
modes should be used. Bleeding renders the action of Mercury
much more certain quick & essential.

5 Blisters should never be used when high inflammatory ac-
-tion exists unless topical affection attend. Dr Rush here finished
his 4th Vol: with a few more comments as a text book, with this
observation. The great secret in Bleeding is the time quantity &
manner of employing it

## Lecture 57th Jan: 26th —

The other remedies which diminish morbid action are 1st the ab-
-straction of heat by cold air. Heat acts positively on the System
Cold acts negatively by abstracting heat. The Body is comforta-
-ble in youth at about 62 of Fahrenheit. In fever the heat of the
body

body is 120 in Health 96° the difference is 24°. Patients should therefore have the room at 24 below 62 or at 38° raising or low=ering it in the ratio of inflammatory action. To obtain its de=bilitating effects the temperature of the room should be below. It is a debilitating remedy & lessens excitement. No general rule can be established as to its application. Much harm has been done by fixing a particular standard. The cool regimen in the small pox has been attended with fatal consequences from the extremes to which it has been carried & not attending to the above regulations It must not be used indiscriminately. When the Lungs are much affected as in Pneumonia Measles &c by a diminished action tho' inflammatory action exists in the Arterial system cold is improper; if there be little action, pure but not cold air, is proper. Its ef=fects are more certain when combined with exercise as sitting up &c as this takes down the excitement & dispipates the excita=bility of the system. Cold water acts like cold air by reducing the heat. It is applied in two ways 1st by ablution 2d by dash=ing it upon the body, in the former way it acts as a sedative in

in the latter as a stimulant. The former alone is to be used in inflammatory fever by applying it to the forehead, feet, or injec=
=ting it into the bowels, in the latter way it acts as a stimulus. I know one case from this mode in the Yellow Fever. Chilli=
=ness sometimes attends inflammatory fever in which case both methods are improper. The Cold bath is used with advantage in Britain. It should be used for a length of time to obtain its sedative effects. The Indians & Africans diminish excess of ac=
=tion in the small pox by plunging into cold water. & Bruce mentions that at Arkuah they used to cure the Yellow Fever by deluging the patient in bed both externally & internally. During the Plague in London a man was cured of it by swimming acros the Thames in a delirium; here the morbid excitement was taken away. A bladder filled with pounded ice & applied to the head acts as an excellent sedative. They all act 1st by abstracting the heat from the body 2° Mechanically by contracting the fi=
=bres. These applications of cold have been objected to, as being prejudical to the exhibition of Mercury – tis no such thing for what

what do we advise our patients to avoid cold when we re=
=commend mercury. It is to preserve them from swelling &
getting sore. If so should we not rather advise the application
of cold in inflammatory fever as it brings about the wished
for effects 2° Abstemious diet. Toast & water, Beer &
wine be sufficient. Light & Sound should be removed they have of=
=ten done harm 3° Fear when moderate I am certain would be
of service in inflammatory fever tis a sedative Motion is
hurtful & ought to be avoided. I have known many instances
prove fatal where very short journeys have been taken in the in=
=cipient stage of fevers of the inflammatory kind 4 Sitting up in
a chair is a good practice it frees the patient from the heat of
the bed. by giving their bodies free access to fresh air 5 Diluting
drinks are of much service in fevers where there is much acri=
=mony of bile too much cannot be said in favor of it Toast &
Water Apple & Tamarind waters are excellent for this purpose as
likewise are jelly & water Milk & water &c Thirst should not
be the measure to invite us to the use of them - they should be
urged

urged at all times. Filth is very perjudical it should be wash-
-ed away with soap & water - Offal Matters should be immediate-
-ly removed from the chambers of the sick. Medicines acting
by diverting morbid action from one part to another all come
under the head of evacuents. Nitre is a sedative & should
be perfered to all the neutral salts except in Cilious cases.
Glaubers salts should then be used in place of it. Cream of Tar-
-tar & Acids of all kinds are useful. Saccharum Saturni I have
given sometimes internally in diseases of too much action with
great advantage. Fox Glove I am disposed to believe might
be given in inflammatory fevers with advantage. Sweet Oil.
The body anointed with it all over has been used in Turkey
in pestilential diseases with considerable succes. Sweet Oil and
Wine mixed together have been frequently used in Fevers. In
coughs oil acts very well by sheathing the Fauces &c——

## Lecture 58th Jan: 27th——

In the low states of fever as Typhus &c Stimulants are necessary.
They

If the disease has continued some time, so as to render it probable that the excitability is much exhausted, we should begin with very large doses of stimuli, & those the strongest — But where the system has been suddenly debilitated, & where a great accumulation of excitability may be presumed, we should begin with very small doses of stimuli —

They are either external or internal, the former are the Warm Bath Cataplasms, Fomentations to the bowels, Limbs &c the latter are divided into Medicine & Aliment. The first are fermented & diluted liquors, empyreumatic Oils, Musk, Castor, Opium Ether, Mercury, Bark, Volatile alkali, Invigorating Passions. The second either Vegetables or Animals used in diet. In administering Stimulants attend to the following directions. —

1st Begin with small doses & with the weakest & proceed gradually to increase them 2d Give but one or but few Stimuli at a time 3d Give them in rotation as the constant use of one prevents the system being acted upon by it & by omitting it for a time its effects are again produced nearly as before 4th Give them constantly this applies particularly to internal Stimuli as Opium.

*Of Stimuli* considered seperately. 1 Wine this consists of a spirit & an unfermented matter called must. The white wines contain more of the nutritious, cordial & stimulating & Antiseptic properties than the red. It may be given either alone

or

or diluted in quantities from Oij to Oiij a day of the White & from one to three bottles of the red. Dr Campbell gave as much as Ovj a day to a woman. When an acid predominates the white wines are to be preferred. Tis remarkable that persons in the Typhus state of fever who in health could not drink half a dozen glasses of wine without being sensibly affected with them will drink two or three bottles without any intoxication.

2° Malt Liquors. Porter is the most preferable of them all. Its bitter possesses a tonic power & is not liable to decomposition on the Stomach. From 1 to 3 Bottles may be taken daily. Dr Lettsome has the credit of first introducing it into practice.

3° Distilled Liquors & Spirits are far inferior to Wine & Malt Liquors as they are less nutritious & not antiseptic. They are stimulating without any other effect. They may however be taken by such as are accustomed to their use with advantage & may be applied externally & by snuffing up the nose. 4 Volatile Alkali. Pringle long ago discovered an antiseptic quality in this substance but its use in this disease arises I think entirely from its stim-

-ulating

=lating the system. From 5 to 10 grs may be given as a dose in the form of a pill.

5 Empyreumatic & Aromatic Oils. Of the former I have only tried the oil of amber which is particularly useful. In the hiccough which attends the last stage of this fever it is particularly useful. Tis good after evacuents in all spasmodic affections, it acts upon the muscular fibres. Oil of mint is very serviceable in making the stomach retain medicines &c. I am little or none acquainted with the Stimulants taken from the Animal kingdom, as Musk Castor &c they succeeded album Grecum & other loathsome medi=cines, Lately an attempt has been made to introduce the urine of the Pole cat into the Materia Medica. I have seldom given them but when I did they never appeared to have much good effect.

Opium is what the Roman Poet calls his "Hero" "Hisc Ipsius Agmen" a host of itself.— I believe it to be a Stimulus a power=ful stimulus, all its effects may be explained on that principle and this opinion I published long before I heard of the name of Dr Brown in medicine in the Philosophical Transactions. Tis true I

I knew him in Edinburgh when a student but he was then dis-
-tinguished for his profanity his velocity & acuteness in writing
& his being a very great Latin & Greek Scholar. That Opium
is a Stimulus I infer from its effects on the human body in
health & sickness. Thus when given in small doses it increa-
-ses the fulness & diminishes the frequency of the pulse if in
large ones inflammatory action is produced. It acts upon the
surface of the body by producing perspiration & its effects are an-
-alogous to those of Spirituous liquors. It produces sleep in the
system when it is below the sleeping point by raising it to it; or
if it be above it by inducing indirect debility. It acts upon the
same person differently at different times according to the state
of excitability 30 drops affect more at one time than 300 at ano-
-ther. Dr Bouguet at Paris took in the course of the day 100 grs
of Opium & 2 ℔ of Ether in the cholic without any bad effects.
It enlivens the mind & removes flatulency from the stomach.
All other stimulants act seperately on different systems but Opium
possesses a Monarchy over every part of the System. Other stim-
-uli

-uli may be compared to a candle giving partial light, while opium may be compared to the sun giving universal light to all nature. I was first led to suppose it a Stimulus from the follow-ing fact. A Gentleman in the lowest state of the Typhus fever took by mistake a teaspoonful of L: Laud: instead of the same quan-tity of Bark mixture & immediately fell into a deep & medici-nal sleep which lasted 48 hours at which time he awoke re-lieved from all his symptoms - during his sleep his respiration was easy & natural. The want of sleep is more frequently occa-sioned by an excess than deficiency of the dose. I have fre-quently induced sleep with 5 or 10 drops when 50 would not have had the same effect. Sleep should always rather be brought on by raising the system to the sleeping point than by inducing indirect debility which tends to effusion. The fol-lowing directions should be attended to in administering opium 1st The less the deficiency of action the less the dose; by attending to this a few drops may have salutary effects 2d The dose should be increased 3d It should be given in small

doses

doses during the day & larger ones at night because the debility at that time is the greatest 4th In all cases of sudden direct debility it should be given in small doses at first. Dr Hedman relates the case of a boy who had been previously debilitated by an Emetic having died in consequence of taking only 30 drops of Laudanum which in his situation was a large dose. 5 After having been used for some time it should be laid aside & other stimuli used in its place 6th It should also be used by Glysters 7 The dose should be Cejoned as the patient recovers in proportion to the degree of action in the system 8th Opium may be given after opium from 30 to 60 drops every hour, tis a very volatile stimulus 'tis principly to be given in nervous diseases 9 Bark is good both as a durable & diffusible stimulus. It should always be given if called early in the disease in the infusion; then mixed with L. Laud: & Hufhams tincture. The same rules in its administration as in those of opium are proper. When it fails in cases which call for it it is because it has not been given in large enough doses. When it is rejected Gentian & Colomba should be given,

Cut

but
Me
1788
he c
order
a sa
with
not
very
avoid
be don
windo
nor
The e
he sa
fever
of the
wider

but they are no more to Bark than Asafotida is to Opium. 9th
Mercury I have ranked it amongst the class of Stimulants. In
1788 I attended a Gent: in the low state of Fever on the 14th day
he complained of a dull pain in the region seat of the Liver. I
ordered Ung: ℈ ℥ss to be rubbed on the part affected, which produced
a salivation & favourable crisis. This medicine may be given
with advantage in the Typhus Fever 10th Pure Air — too much can-
-not be said in favour of pure air: I say pure air for cold air is
very hurtful in these Stats of Fever. It may be obtained by 1st
Avoiding all the causes that corrupt it 2d Correcting it this may
be done by means of Fire places & fires in the middle of the room, Large
windows are of great service. Earthen walls are said neither to retain
nor propogate contagion this is left on record by Count Saxon.
The efficacy of smoke in curing Fever did not escape Mr. Bruce for
he said those poor people who Lived in smokey Houses escaped the
Fever of Mesuah. I was informed by Mr. Adams Vice President
of the U. States that he had seen the deflagration of Nitre have
evidently good effects. The Vitriolic or Nitrous acid poured on
salt

salt has a good effect in purifying. There are other remedies which have been given by the nose & by way of glyster. The smell of vinegar either pure or burnt on a shovel is very grateful in this fever. Volatile Liniment is used applied to the Stomach & Bowels & injections of Bark Wine & Laud: Liq: are also very serviceable ℔ Invigorating Passions. The state of the patients mind in this state of fever should never be neglected. Anger & Terror have both been attended with success. Courage has done wonders. Hope is powerful we have it more at our command. A good answer to make your patients when they enquire about their friends who are ill or even if they have lately died is "that they are very low but you hope they will soon rise or get up again". —

## Lecture 59th Jan: 30th ——

12 Aliment. Tis either Animal or Vegetable. The vegetable are sago, panada, Taproka &c Animal food has been objected to on account of its alkalescent tendency but without foundation. It is far superior to vegetable, because it is more stimulating.

Oysters

Oysters & Chickens are grateful. When soups cannot be used solid food may be recommended. Two things in administering diet should be attended to 1st The appetite must not regulate it for there is often an appetite without digestion & vice versa 2d You should tempt your patient to eat often tho' but little at a time.

// External Stimuli are 1st Several of the internal Stimulants so prepared as to be applied to different parts of the body as the Nose the Temples the external regions of the Stomach & bowels the limbs & lower intestines by way of Clysters 2 Cold Bath & Warm-bath but this can seldom be used with safety on account of the great debility which succeeds the exertion of getting out of bed. Dr. Tilton was nearly destroyed by attempting to use it in the time of the late war. All their good effects however may be obtained by means of warm fomentations to all parts of the body. Brandy & Water or sponging the body with cold & warm water will answer. Cataplasms of bread & milk should be applied to the belly. Flour & Mustard to the feet; but should continue only two or three hours in which time they will have produced their good effects & after this

23° & last

this time they only excite inflammation is of great service. If these fail the external application of Bark moistened with wine will have a good effect. Dr Broadbelt of S Carolina was cured by being wrapped up in a sheet wet with a strong infusion of Bark & Wine 3° Blisters are not improper; but they are in this case what Dr Brown calls them the extreme Unction of Medicine. There is a point in the System which I call the blistering point. They should never be applied after this 4th Fomentations of mint water Vol: Liniment &c to the belly are proper. 5th Caustics in the low lethargic state of fever are of immense service they should be applied between the shoulders 6 Boiling water should be used in the lethargic state of fever & syncope as we wish it to act quick when this is not at hand we may substitute a coal of fire. Is it proper to sit up in the low state of fever? I have seen many deaths in consequence of getting up to stool. I saw death hastened by moving the patient from one side to the other. Cloths should be used instead of a bed pan to remove the patients stools. Are cold drinks proper? No they should be warm unless there be a local

affection

affection of the stomach as happens in the last stage of these fe-
vers from a retreat of the excitement of the system to this organ.
Is sleep proper? the pulse must here be attended to if the pulse
be active it is, if it be low the patient should be frequently
awoke to take nourishment or stimulus. In my attack of the
Yellow Fever I fell a sleep in the night while I was in the low
state of the disease with every symptom of approaching death &
I think I could not have lived 20 minutes longer had I not ta-
-ken something stimulating. I took a few spoonfuls of soup & was
immediately relieved. These observations shew the immense con-
-sequence of frequent visits to our patients & I will here risk a bold
assertion that if we were to remain always with our patients & watch
the various changes in the system; it would be impossible for them
to die of a fever. Is purging proper? No one stool a day is suffi-
-cient no inconvenience will arise from a retention of them for
two or three days. A Physician should always study the climate
& diseases of the part where he lives; then the habit & constitu-
-tion of his patients &c The state of the pulse I repeat it again the

the state of the pulse is the compass from which we should never take our eyes in our perscriptions. Tis it should alter, Lessen or increase our medicines. With this Gent: we end our description of Fever generally yet after the termination of Fever patients are frequently the objects of Medicine. —

Convalescence itself is a disease composed of debility excess of excitability with several symptoms of Fever. Its symptoms are 1st Watchfulness 2d Sickness or Vomiting 3d Defect of appetite 4th Swelled legs 5 Obstructions of the viscera 6th Ulcers 7 Drawling or defect of speech 8 Impaired memory 9 Alteration of the voice 10 Costiveness 11 Falling off of the hair or its turning grey 12 Impaired state of the understanding. The moral faculty is very often depraved sometimes a little bile is discharged especially after Bilious Fever 13th Feverishness this will happen frequently & is sometimes preceded by chills. The cure consists in cordial drinks & nourishing diet of the former Porter &c of the latter Chocolate Beefsteaks Oysters, Wild fowl &c We must make the patient eat little at a time & often. Fruits of every kind are grateful & proper in Convales-

-cent

-cent States of Fever. We must however for some time use them moderately. Mr Howard tells us there have been relapses from eating animal food 40 days after a recovery from the plague and Mr Bruce tells us that after a severe Fever the smell of meat had a very bad effect. The premature indulgence of the Venereal ap-petite has frequently brought on a relapse as has also the too great exercise of the understanding. Dr Campbell relates the case of a convalescent who died immediately after answering an intricate letter. Hurry your patient as soon as possible out of the room in which he has so lately escaped the grave for his empty pill boxes rags fragments & Plaisters frequently produce a relapse by a debilita-ting association of Ideas. A change of dress I would strongly recom-mend. I have heard of a Gent: in S Carolina who cured himself of a lowness of spirits by going frequently to his wardrobe & changing his dress. Gentle exercise in a carriage; but not so long continued or violent as to produce fatigue for novelty has a very fine effect. Huxhams drops has likewise been useful. This is a very fine cor-dial after low fever 1st If the fever were taken by contagion we

must

must avoid it 2ᵈ he must avoid purging for its debilitating effects may be too severe. For some of the symptoms attending Convales=
=cence the following remedies may be employed 1st For the obstinate watchfulness a few drops of L: Laud: are proper at bed time 2ᵈ a sick stomach in the morning may be prevented by eating a lit=
=tle during the night 3ᵈ a few drops of Elix: Vitriol three or four times a day or a preparation of Bark or Colombo root are very service=
=able to restore the appetite 4 Swelling of the legs is removed by rubbing them in the morning only & upwards 5 Viscera obs=
=tructions may be removed by bleeding or Mercurial purge or oint=
=ment 6 Ulcers according to Pringle may be treated with stimula=
=ting applications. 7th The impaired state of the Faculties is very hard to remove. I have known Catarrh cured by the cold bath & I have known lying cured by it. Time & good living will proba=
=bly remove the rest. By attending to these remedies many have been saved from the grave. From the present successful method of treating Fevers not one in 100 dies, tho' 30 years ago 10 out of that number died. Let us go on & I doubt not but it will be as rar

rare for a man to die of a Fever as a Toothache. Great care is necessary with regard to Nurses for they frequently baffle the efforts of a Physician by a total neglect or improper exhibition of the medicines & diet prescribed. When the patient is in danger you must trust none but established characters.

Consequences of Fever — 1st in Young people it accelerates growth 2d It increases fat 3d It removes chronic diseases 4th Sometimes it removes Barrenness

## Lecture 6th Jan: 31st

Prognostics. Little can be known from pain in the prognostication of diseases. There may be disease without pain, but there cannot be pain without disease or morbid action. Women bear it better than men because their systems soonest run over the point of pain. A Coldness of the Wrists denotes death to be near at hand. A Coldness of the Breath is a fatal symptom. I never knew one to recover after it had taken place. It shews that the surface of the lungs has become cold. A red eye shews inflammation or congestion in the Brain

Brain & when it takes place in the absence of Fever is a dangerous symptom. A Muddy eye shews Fever of great Malignity as Yellow Fever &c. A Preternatural acuteness of Hearing denotes a crisis to be near at Hand. Insensibility to coldness, Burns & Blisters are alarming. Preternatural sensation of Touch favourable. Running of the Nose & an acute sense of smelling denotes a crisis to be near at Hand, rather favourable. The tongue of a dark brown colour denotes a bilious complaint. White tongue a Malignant Fever; a dry tongue always alarming. Moist favourable. A dark tongue often continues for some days after the patient is on the recovery. Tremors of the tongue are bad. Fixed teeth, Hanging of the lip & under jaw, & grinding of the teeth are all unfavourable symptoms. Yawning Sneezing & Sternutation are all favourable. A Chill in the close of a chronic Fever is always favourable - it shews the breaking of the Fever. A Quick & sharp voice are alarming - Drawling voice favourable Phrenitis sometimes favourable & sometimes unfavourable. Frowning shews an affection of the Brain in Malignant Fever. It was from this symptom it took the name Malignant. A resemblance in the face to Ancestors

=tons is unfavourable. The Hippocratic Countenance which may be known by the ghastly look, sharp nose, hollow eyes, sunk temples, shriv=elled ears with the turned upwards pale cadaverous colour &c is a dangerous symptom. Alternately quick & low respiration hollow sound in breathing. Rattling of the phlegm in the throat. Working of the Shoulders. Expansion of the Nose & cheeks are all unfavourable. Position on either side most favourable back less so. Feet drawn up worse and sliding down in the bed worse than all. Peevishness particularly in chronic fever is favourable. Asking for things uncommon and silence are unfavourable. Patients sometimes shew an indefference to their Physician and friends when en=tering the room. When I have been attending such an one and find him change and willing to turn his head when I enter the room I immediately pronounce him bet=ter. Difficulty & noise in swallowing are bad signs. Thirst in the last stage of fever is unfavourable it shews the last retreat of morbid excitement to the fauces. No thirst in

in
Pal
shee
Pale
who
in
good
=Jer
shou
pro
say
was
he
nev
=no
Whe
sayi
who

in the beginning of fever is alarming; A return of former habits as for Tobacco &c is favourable a Suppression of Urine shews an engorgement in the urinary vessels of the kidneys. Pale urine bad. Green & Black stools shew morbid bile. Stools which corrode the rectum shew acrid bile. absence of smell in stools is bad a return of smell is favourable. Crepitus a good sign. Partial sweats bad Cadaverous smell bad. Two in-=ferences may be drawn from what has been said 1st We should never give over our patients — 2d We should never prognosticate the issue of a disease. If you do always say they will die. You will then be like the Irishman who was sure he would draw a prize in a lottery because he thought he would draw a blank. But to be serious never say you can cure a disease positively. never prog-=nosticate the event & they are equally signs of Quackery. When I have been asked the event I have generally evaded by saying "I have seen those who were apparently worse recover & others who did not appear so bad die". This though it said nothing

nothing generally satisfied.

Signs of Death. I know but one sign of death Gentlemen I mean putrefaction. Even this should not be de=pended on when partial. I have seen patients recover after the Cadaverous smell & sweats which shew a partial putre=faction. —

End of Vol: 1st

٢٠١٠

RUSH
—
LECTURE
NOTES

1